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ABSTRACT

Results of a 1978 Association of Research Libraries (ARL) survey indicated that 68 (89%) of responding libraries utilized an automated cataloging system. Of those 68, 53 participated in the Ohio College Library Center (OCLC), five in BALLOTS, and the rest in other networks or local systems. At the beginning of this collection, a concise summary discusses implementation of automated cataloging, impact of automated cataloging systems, and system evaluation. The kit comprises: (1) five documents on planning and rationale for automated cataloging from University of Arizona, Colorado State University, Duke University, Michigan State University, and University of California/Berkeley; (2) documents on implementation of OCLC and SOLINET (Southeastern Library Network) from University of California/San Diego and Duke University; (3) training documents from Brigham Young University and Washington University; and (4) system evaluation reports from University of California/San Diego, University of Arizona, University of California/Davis, Washington University, and University of Chicago. (THC)

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Kit 47

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AUTOMATED CATALOGING IN ARL LIBRARIES

Libraries have been developing and utilizing automated cataloging systems since the mid-1960's. Although some early research was directed toward local systems, the development during the late sixties and early seventies of national or regional on-line networks has proved of most significance to academic and research libraries. While some benefits have been production-oriented, such as rapid production of catalog cards, the shared on-line systems also have led to economies in original cataloging by providing shared catalog records to all users of a particular system.

The largest shared cataloging system is the Ohio College Library Center (OCLC) with over 800 participating libraries, including the majority of the ARL membership. Other systems include: BALLOTS, developed at Stanford University and used by over 80 libraries; the system developed and used by the New York Public Library; the UTLAS system available to Canadian libraries from the University of Toronto; the Washington Library Network (WLN); and the Library Data Management System developed at the University of Chicago.

Results of a SPEC survey of ARL libraries in Spring 1978 indicate that 89 percent (68) of responding libraries utilize an automated cataloging system. Of those 68, 53 participate in OCLC, five in BALLOTS, and the rest in other networks or local systems. Among those libraries responding, the first use of an automated cataloging system was in 1964. However, it was 1975 before the majority had implemented automated cataloging.

The most frequently cited reason for automating was the potential reduction of staff time for cataloging and searching. This was interpreted both as a savings in personnel costs and as a reduction in the time required to get materials cataloged and available on the shelf. Another major rationale was to reduce the amount of original cataloging which would, in turn, reduce per-item cataloging costs and help with the elimination of backlogs. Gaining on-line information to assist in the interlibrary loan process was mentioned less frequently.

IMPLEMENTATION OF AUTOMATED CATALOGING. In deciding to shift to an automated system, most respondents gathered information on a variety of options. The decision-making process typically involved a number of staff because of the complexity of the issue and the probable impact of any change. Libraries looked at technical requirements, quality of cataloging output, relative costs, and expected benefits. While analyses frequently were carried out by technical services staff, some libraries formed broad-based committees which included public service staff and/or administrative staff. The training of professional and support staff was an important part of the conversion process at most libraries. The magnitude of this task varied according to the size of the staff, the organization of the cataloging department, and the system's complexity. On the average, the responding libraries trained eight professional and 11 support staff during the initial conversion phase. While training programs lasted up to six months, the majority were completed within three months.

For most ARL libraries, regional networks or consortia such as NELINET and SOLINET have provided valuable support for implementation. Their role has typically included the negotiation

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of contracts with cataloging networks, administrative consulting on initiating automated cataloging, and accounting and billing for member libraries. In addition, regional networks have designed and operated staff training programs.

IMPACT OF AUTOMATED CATALOGING SYSTEMS. The impact of automation on organizational and staffing patterns has varied widely. Eighty-six percent of the reporting libraries indicated some reorganization of work units and/or changes in reporting relationships; 56 percent reported a reduction in total FTE for cataloging. More libraries reduced professional staff than support staff, but the average reductions were two FTE professionals and six support staff.

In identifying changes in cataloging procedures resulting from automation, 91 percent of the libraries indicated faster searching times with the automated systems; 90 percent have reduced the amount of local card production, and 78 percent have reduced their amount of original cataloging. Also significant were reductions in backlogs (60%), increased productivity (59%), lower unit costs for cataloging (45%), and improvement in the quality of cataloging (30%). Another major area of impact has been the processing of interlibrary loans. Nearly 70 percent of the responding libraries reported faster searching for needed items through shared cataloging data bases and approximately 40 percent reported more accurate reference sources. The acquisitions process at most libraries also has improved with the introduction of automated cataloging systems. This has been most obvious in the pre-order searching process, but another effect has been in determining availability of material elsewhere when it is of marginal or questionable importance locally.

The financial impact of automated cataloging has been somewhat complex. While only 19 percent reported reductions in the total cataloging budget, 31 percent reported a reduction in the rate of increase of these budgets. There are indications that most savings have been in staffing but that some of these savings are typically used up in system-related costs. It is also apparent from the responses that the financial impact has been evolutionary. The change to a new system involves one-time costs for hardware and training. Shifts in staffing patterns, on the other hand, normally occur over time, allowing for both organizational and human adjustments to the changes. But the survey indicates that for most research libraries the savings have been in terms of increased productivity and efficiency rather than in gross budgetary reductions.

SYSTEM EVALUATION. Reflecting on their original expectations for the systems, two-thirds of the libraries reported they are accomplishing what they expected. Since most libraries use OCLC, the most frequently mentioned concern was with the quality of OCLC's contributed records. Many of the libraries find their staffs spending considerable time adapting records which do not meet their requirements. Other expressed needs are for improved subject access to the various data bases and for faster progress toward additional modules, particularly for acquisitions and serials control.

In general, research libraries reported they have benefitted greatly from the use of automated cataloging systems. Some of these benefits have been economic, but the most important have been performance-based. It is also clear that these systems are relatively young and that libraries' experience with them will lead to additional developments, both in the systems and in the organization and programs of the libraries themselves. Automated cataloging systems also provide the first step in the development of a national library network. They allow dialogues among libraries to occur efficiently and inexpensively, and they indicate the potential for greater utilization of the nation's library resources.

* * * * *

The Kit on Automated Cataloging contains five documents on planning and rationale, four documents on implementation and training, and five documents on evaluation. The 107-page Kit is available for $7.50, prepaid, to ARL members and subscribers, and for $15.00, prepaid, to all others, from: SPEC, Office of Management Studies, 1527 New Hampshire Avenue, NW, Washington, DC 20036.

ISSN 0160 - 3582

AUTOMATED CATALOGING IN ARL LIBRARIES

KIT #47 - AUGUST - SEPTEMBER 1978

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PLANNING AND RATIONALE

THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA 85721

UNIVERSITY LIBRARY
OFFICE OF THE LIBRARIAN

31 October 1974

MEMORANDUM

To: W. David Laird

As you know, we have recently been invited to join with the Inter-university Council of the North Texas Area (IUC) to implement the computer-assisted cataloging system provided by the Ohio College Library Center (OCLC). The following paragraphs are my recommendation that we join IUC-OCLC and contain the justification and reasoning behind the recommendation.

For most libraries cataloging is and has been a highly labor-intensive operation, with costs rising faster than productivity. The larger the catalog becomes, the more expensive it is to add each new item to it. Reclassification to the LC system is achieved only at great cost, i.e., by expending a great deal of skilled and semi-skilled labor.

In the libraries of major universities, cataloging backlogs have been commomplace, because it is generally easier to get money with which to purchase books than with which to process them. "Hurry up and wait!" has become more than a catch phrase. It is a way of life. The University of Arizona Library is, in fact, fortunate that its arrearages in cataloging are small. Nevertheless, it is not unreasonable to expect to wait (for newly purchased materials for which the Library of Congress provides cataloging data) for up to nine months before a book's appearance on the shelf. This backlog increases and can be brought up to date only with the infusion of money into the wages and equipment budgets or by taking a new approach to the problem.

At present we maintain a depository file of catalog cards produced by the Library of Congress. We are spending approximately $5,000 per year to maintain this file. An additional $1,650 per year is needed to bring the file up to date and keep it there. On an emergency basis we presently infuse more expensive labor from other areas to bring the file up to date. Having the file fall behind requires original cataloging which is performed by even more expensive professional librarians.

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Briefly, employing present techniques, the only solution to the problem which the needed expansion of library resources presents to the Catalog, Serials, and Acquisitions departments is more than proportional increases in staff, equipment and space.

For a number of years Mr. Charles M. Peters, the former Assistant University Librarian--Technical Services, has examined the possible solutions to the complex problems of processing library materials at the University of Arizona Library. Over the past ten years, incidentally, the most intense and fruitful research on library problems has been in the area of library cataloging and indexing. Mr. Peters and the Catalog Department have examined the potential usefulness of Abel's ACTS, Cardset, Josten's Telemarc, Bibnet and its several variations, and the Ohio College Library Center (OCLC).

With the exception of OCLC, each of the systems considered requires the maintenance of a large, parallel system for the production of catalog cards, typing and filing. This is the case for the reasons that only 50 percent of the titles cataloged are likely to be available on them and that there is no provision for input of local cataloging data. A link with OCLC has not been recommended previously because of the high cost of communications in "going it alone." Entry of IUC into the operation has changed the picture.

The Ohio College Library Center is a not-for-profit corporation which was founded in 1967 to take advantage of benefits to be derived from library cooperation within that state. Without going into the details of their operation, let me say that it has been an unusually successful operation, particularly in the area of computer-assisted cataloging.

The system is based upon access to the MARC tapes of the Library of Congress which provide on-line, machine readable cataloging data to member libraries via cathode ray terminals. Libraries, finding such data, order production of fully headed sets of catalog cards for their materials from OCLC. The cards are sent in ready-to-file order and to the specifications of the member libraries. When member libraries do not find data on the system, they catalog the books and input the data for the use of other member libraries, at the same time ordering card sets for their own use. Machine readable tapes of all data used and input are available to the users of the system.

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Implementation of this system even through IUC will not be inexpensive. Including line charges and hardware, we will be billed at $1.97[1] per "hit," i.e., for each initial use of data found on the system, and $.035 per catalog card produced. This charge includes $.20 per hit optional charge for implementation of the serials control system (see below). Total costs for the cataloging system in 1975/76 will be approximately $57,380 plus $4,800 for the serials system.

OCLC COSTS 1975/76

Estimated "hits"	24,000	x	$1.97	$ 47,280.00
Cards produced	340,000	x	.035	11,900.00
Estimated System Billing				59,180.00
Non-Roman catalog card production	60,000		.05	3,000.00
Total card production costs				62,180.00
Less optional serials system				4,800.00
Catalog System Costs				$ 57,380.00

As shown above, it will be necessary to produce cards for materials in non-Roman alphabets separately at an approximate cost of $.05 per card, since no present system can handle alphabets other than Roman.

In reviewing these estimated costs and the savings estimated below, it is important to note that the system which we are asking to implement does not simply do the same work at the same speed as the present system. It is my estimate (and goal) that the 70 percent of the materials purchased which are found on the system will be available on the library shelves within two months of receipt rather than six to nine months as presently. In addition, the planned supplements to the system (Serials Control, Acquisitions, and labeling) can all be viewed as further savings. In fact, the budget request for 1975/76 includes $10,000 for the preparation of a serials list which should be unnecessary to spend in the OCLC system.

1. The equivalent rate for Ohio libraries is $1.90.

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PROJECTED SAVINGS ON OCLC SYSTEM
TO CONTINUE ANNUALLY

Function and Budget	Present Funds 1974/75	Requested Funds 1975/76	Needed Funds or Future Savings 1976-78
Wages Budget			
Depository Filing	$ 2,800.	$ 1,650.[1]	
Salaries			
Catalogers	10,000.[2]	10,000.[3]	$10,000.[4]
Typing	5,000.		5,000.[5]
Serials Cataloger 1/2			6,000.[6]
Serials Typist	5,000.		5,000.[7]
Sub Total	20,000.	10,000.	26,000.
Capital			
Xerox Machine	4,500.		
Operations			
Xerox card stock	6,000.		
Copy Cat Camera and supplies	1,400.		
Sub Total	7,400.		
GRAND TOTAL	$34,700.	$11,650.	$26,000.

1. Not in 1975/76 request as a line item but needed to bring filing up to date.
2. Bringing present staff to 11.
3. AV Cataloger requested in 1975/76 budget, staff remains at 11.
4. Additional cataloger, staff drops to 10 provided increase in hit rate justifies the elimination of the position.
5. Typist required in future with rising book budget.
6. Actually, transfer to serials acquisitions, therefore remaining in overall budget.
7. Projected gain in serials data base should allow elimination of second typist.

NOTE: Additional help needed in serials check-in unless automated system is implemented.

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In addition to the savings displayed above, the fact that the Technical Services staff (after three years) will be smaller than it might have been will be reflected in savings on equipment and space which I have not attempted to estimate.

It is my judgment that in the first year of operation (1975/76) we will spend approximately $57,380 on the cataloging portion of the system of which $46,350 is recoverable immediately (dependent upon attrition of one cataloger and the actuality of the funding request for $1,650 for supplemental filing help). Between 1975 and 1978 it is possible to foresee an additional $26,000 in savings which will be partially offset by increasing hit rates and card production.

My proposal is for you to make the necessary budget adjustments to absorb the $11,000 deficit per year, decreasing over three years. At the end of the third year (1977/78) the system should be cost effective in terms of real and projected savings.

In addition, I propose payment of the additional $.20 per "hit" for implementation of the serials control system which should give us access to an on-line check-in system as well as machine readable records of holdings. As shown above, this cost is approximately $4,800 per year. Within three years the savings accrued by not adding to the staff involved in this backlogged operation should make it cost effective as well.

The entire proposal, of course, rests on the assumption that IUC will in fact make the data base and its services available to us at the cost estimated. It also rests on assumptions in regard to growth and "hit rates" which are unverifiable without access to the system.

The proposal has the unanimous support of the heads of the Acquisitions, Cataloging and Serials departments.

James N. Myers
Assistant Librarian
for Technical Services

JNM:jg

CC: Carolyn Kacena
Helen Maul
Andrew Makuch

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COLORADO STATE UNIVERSITY
February 1976

OFFICE MEMO

TO: Dr. L. W. Anderson Date February 24, 1976

FROM: R. W. Burns

SUBJECT: Comparison of CSU and OCLC Cataloging

REMARKS:

This memo is written to compare OCLC (Ohio College Library Center) processing with our current Cataloging costs and to develop a methodology which will answer the question, "What does it cost to process a title/piece through the Cataloging Department at CSU?" The report is also intended to serve as a base on which to evaluate the advantages of OCLC processing.

SUMMARY:

Manual Cost To Catalog A New Title	= $2.41/Title
Production Rate To Manually Catalog A New Title	2.6 Titles/hr.
OCLC Cost To Catalog A New Title	$2.2499/Title
Production Rate To Catalog A New Title Using OCLC	14 Titles/hr.

I. Givens:

1. CSU Libraries costs are based upon data acquired during the operating year FY 1974/5 and projected over the five year time span, 1976-1980.

2. Although use of OCLC will affect many Departments, the major impact of its implementation at CSU will be felt by the Cataloging Department. For purposes of this report, therefore, there is only one cost center, i.e. the Cataloging Department.

3. A work month contains 173.333 hours and a work year contains 2080 hours without vacation, holiday, or coffee break time deducted. This is equivalent to 260 eight hour work days. Please note that 52 forty hour weeks equals 2080.

4. Aggregate Salaries Paid Cataloging Staff (10) is $87,871.

5. Aggregate Hours Worked By The Above Staff* is 16,748 hrs.

6. Production Levels By Above Staff in 1974/5

a.	Pieces Cataloged (Hard Cover)	17,938	
	Pieces Cataloged (Soft Cover)	6,720	
	Total (includes 14,585 new titles)		24.658
b.	Volumes Reclassified		4,504
c.	Titles Recataloged		864
d.	Volumes Transferred		1,707
e.	Non-print Pieces		20,482
	Total Work Output (Pieces Handled)		52,215

* Vacation hours have been deducted from 2080

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7. OCLC Estimated Production Rate (Mean)
14 titles/hour cataloging With Copy In Data Base (FTU's)+
Hours Department operates

52 X 40 = 2080

Production rate using OCLC would be

2080 X 14 = 29,120 titles cataloged.

8. Estimated percentage of the total productive work hours (See II.3. below is 14,026) available to the Department which are spent cataloging new titles is 40%*

.40 X 14,026 = 5610.4 hours spent in cataloging new titles.

9. Estimated queries of data base per year including card production, verification, etc.

20,000 queries per year (see II. 10.)
20,000 ÷ 260 = 76.92 per day
or 76.92 ÷ 2 = 38.46 per day per terminal
or 38.46 ÷ 8 = 5 per hour per terminal under ideal conditions, i.e. everyone present and terminals operating every hour of work year such that the load is evenly spread over year.

* Based on an estimate given by Department Head.
+ OCLC defines a First-Time-Use as the first time a library uses for catalog production a record already in the data base which it did not input.

II. Findings:

1. Proportion of Pieces Handled Which Are New Titles Cataloged.
14,585 ÷ 52,215 = 27.93%

2. Aggregate Cost Per Piece Handled
$87,871.00 ÷ 52,215 = $1.6829

3. Staff Hours Available to Department In FY 1974/5 (Vacation time has been deducted) 16,748 hrs.

Less coffee breaks which are 6.25% (.5 ÷ 8) of the time spent on the job.
.0625 X 16,748 = 1046.75 hrs.

Less sick and non-productive time of staff
10% X 16,748 = 1674.8 hrs.

Estimated (optimistic) total Productive Time Available to Catalog Department.
16,748 - 2721.55 = 14,026.45 hrs.

4. Using The Above Staffing Pattern The Cost Per Productive Working Hour To Operate Department Was

$87,871.00 ÷ 14,026.45 $6.265/hour.

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5. Using the earlier FY 74/5 Staffing Cost, were the library to plug into OCLC and reach the estimated OCLC production rate (14 titles per hour), it would cost CSU (using existing staffing pattern) per title to catalog new titles:

$6.265 ÷ 14 titles/hour cataloged. Staff only = $0.4475 per piece per hour.

6. This should be compared with the estimated manual FY 1974/5 staffing costs and the cost per piece to manually catalog new titles.

Given: that $87,871 was spent handling 52,215 pieces and 40% of this time (dollars) was used to catalog 14,585 titles

thus

40% of $87,871 = $35,148.40 was cost to catalog 14,585 new titles for a unit cost of $35,148.40 ÷ 14,585

or

cost to manually catalog a new title = $2.41.

We also know that

5610.4 hours were spent in cataloging these new titles (See I.8). This is a production rate of
14,585 ÷ 5610.4
Number of new titles cataloged per hour = 2.6

Summary:

Using the manual system we estimated that

The aggregate cost to handle each piece	= $1.6829
The cost to catalog a new title	= $2.41
Number of new titles cataloged per hour	= 2.6

7. The cost of operating OCLC is, however, much more than the staffing costs noted in item 5 above.

It also includes:

The cost of terminals (2) amortized over 5 years at $3,700 each

2 X 3700 = $ 7,400
5 X 2080 = 10,400 hrs.

Making the cost per hour to amortize terminals

$7400 ÷ 10,400 hrs. terminal cost = $0.7115 per hr.

8. Add to this $1000 (estimated high) spent for development costs (design of profile, training, wiring, phones, etc.).
Amortized over the life of the project

$1000 ÷ 10,400 hours Development Costs = $.0962.

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9. Sum These to Derive Cost Per Hour Of Operating OCLC System

Staff Costs (See 5 above)	$0.4475	
Terminal Costs (See 7 above)	$0.7115	
Development Costs (See above)	$0.0962	
OCLC total		$1.2552/hr.

10. Add Cost to Produce Cards Using OCLC

Assume 15 K new titles added each year with each requiring an 8 card set. Under OCLC this will cost

15,000 X 8 X $0.04* = $4800

Less manual costs to produce catalog cards:

Purchase of proof slip file which would be eliminated under OCLC	$ 495.00
Labor costs to file cards in PS file. 20 hrs. week X 52 = 1040 1040 X $2.15 hr.# =	2236.00
Savings in catalog card production which would accrue by eliminating manual card costs	$2731.00

OCLC costs would thus be

$4800 - $2731 = $2069

$2069 ÷ 2080 = Cost of Cards per hour $0.9947

*See OCLC Newsletter 31 Oct 75, No. 89.

#Work study cost rate to University. Library pays 20% of this.

11. Therefore, the comparative cost per hour to use OCLC for first year of project to catalog books will be approximately

Staff Costs (See 5 above)	$0.4475	
Terminal Costs (See 7 above)	$0.7115	
Development Costs (See 8 above)	$0.0962	
Cost of Cards (See 10 above)	$0.9947	
Total		$2.2499

III. Recommendation

1. That the CSU Libraries forward to the OCLC a letter of intent indicating its desire to join OCLC and to purchase 2 terminals with suggested delivery to be made in late summer 1976.

IV. Conclusion

It is our conclusion that the CSU Libraries can no longer delay its membership in OCLC. There are numerous advantages for a labor intensive operation such as Technical Services. We do not feel it unreasonable to estimate an annual salary cost rise of 6% over the next five years which would leave an operation costing $87,871 in 1975 requiring $117,591.217 to operate in 1980 with same number of staff hours. This represents an increase of $29,720.217 or a 33.8% rise in salary money. Such increases are no longer acceptable and the use of OCLC cataloging is a viable alternative.

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My 24, 1976

Revised June 7, 1976

OCLC/CSU PROGRAM SCHEDULE SHEET

Colorado State

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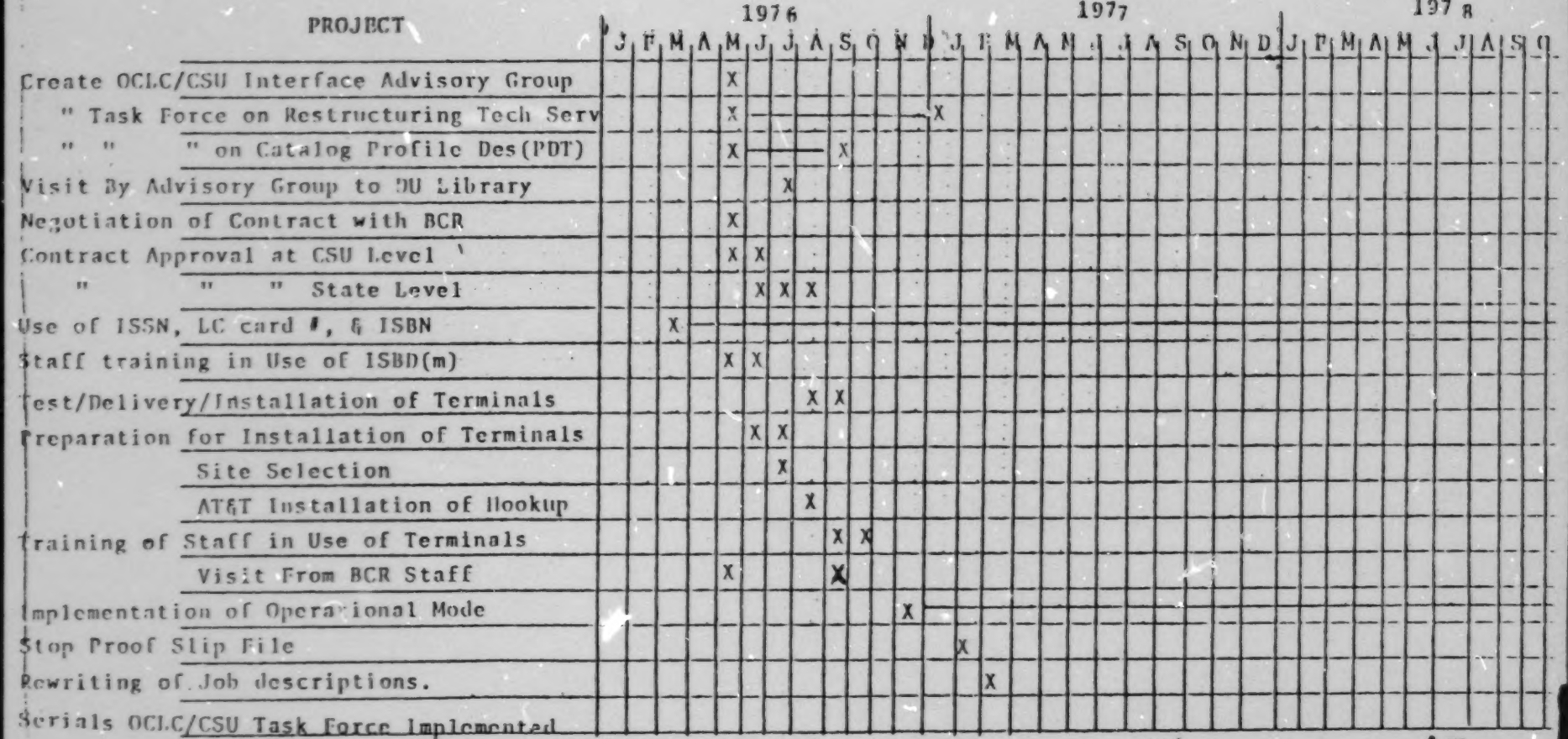
PROJECT
1976
1977
1978
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O
Create OCLC/CSU Interface Advisory Group
" Task Force on Restructuring Tech Serv
" " " on Catalog Profile Des(PDT)
Visit By Advisory Group to DU Library
Negotiation of Contract with BCR
Contract Approval at CSU Level
" " " State Level
Use of ISSN, LC card #, & ISBN
Staff training in Use of ISBD(m)
Test/Delivery/Installation of Terminals
Preparation for Installation of Terminals
Site Selection
AT&T Installation of Hookup
Training of Staff in Use of Terminals
Visit From BCR Staff
Implementation of Operational Mode
Stop Proof Slip File
Rewriting of Job descriptions.
Serials OCLC/CSU Task Force Implemented

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A PROPOSAL FOR FUNDING TO SUPPORT DUKE UNIVERSITY LIBRARY IN JOINING A NETWORK

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not included in KIT

011

A Proposal for Funding
Submitted to the Duke Endowment
by Duke University Library

I. Purpose

The Duke Endowment is hereby petitioned by Duke University Library for funding to enable the Library to contract with and participate in a processing network.

II. Library Networks: A Perspective

Library cooperation has changed markedly since a major sharing of services was inaugurated by the Library of Congress (hereinafter designated LC) in 1901. In a pioneer venture LC began to print bibliographical data on cards and to make them available by purchase to other libraries. Subsequently the nation's research libraries were provided with sets of LC printed cards which obviated the necessity of carrying out more costly original cataloging procedures.

From these beginnings library cooperation has expanded to include sharing cataloging copy locally and regionally, standardizing cataloging rules, developing interlibrary loan systems, and listing library collections in union catalogs on national, state and local levels to make their existence and availability more widely known. Various National Union Catalogs, published by LC, have appeared since the late 1940s and early 1950s. Of these, the monumental 610 volume National Union Catalog: Pre-1956 Imprints, at this time about two-thirds completed, is the largest. Such printed tools provide both cataloging copy and location information to assist with interlibrary loan requests.

In 1969 a new service to subscribers was offered by LC with the appearance of machine-readable (MARC) records. The availability of bibliographical information in machine-readable and manipulable form signaled a major change

in library cooperation for it made possible the development of the library network. A library network may be defined as "a specialized type of library cooperation for centralized development of cooperative programs and services, including use of computers and telecommunications, and requiring the establishment of a central office and a staff to accomplish network programs rather than merely to coordinate them."[1] Within this general definity all library networks fall into one of two main types: (1) the retrieval network which supplies information through access to data bases, abstracts and other printed sources and (2) the processing network which supports cataloging, acquisition, interlibrary loan and related processing functions.

Since the introduction of the MARC service by LC in 1969, there has been a rapid and dramatic growth in library networks, especially of processing networks. The first to emerge was the Ohio College Library Center (hereinafter designated OCLC), the outgrowth of a statewide effort, which now is the key to much of the network activity in the eastern United States. More than 900 libraries and smaller network cooperatives regularly add to and derive benefits from a data base of over 2.5 million records. OCLC's operations and significance have been characterized this way:

> OCLC is a private, non-profit organization, chartered in Ohio and financed by annual library membership fees. It is governed by an elected board and has an extensive headquarters facility and and staff in Columbus, Ohio. Originally intended to serve Ohio's academic libraries, its charter has been revised to allow service to most types of libraries without geographic restriction.
>
> OCLC has concentrated heavily in the provision of cataloging services, initially for monographs, and more recently for serials. Members search a central data base through cathode ray tube terminals and either use records in the data base or input local

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[1] Barbara Evans Markuson, "Library Networks: Progress and Problems," in The Information Age: Its Development, Its Impact, ed. Donald P. Hammer (Metuchen, N. J.: The Scarecrow Press, Inc., 1976), p. 35. The author goes on to observe: "Programs require significant funding and usually formal contracts are required between users and the network, which is, in most cases, a legally established corporate entity."

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records as required. Sets of catalog cards, printed to members' specifications, can be ordered automatically from the terminal. The data base is also used extensively for such purposes as acquisition searching and for other tasks involving bibliographic verification. A special feature of an OCLC catalog record display is the inclusion of three-character alphabetic codes to indicate the libraries that have cataloged a particular title through the OCLC system. This feature informs a library, in a rapid way, of acquisition and cataloging activities of other libraries in the system; these holdings records also facilitate interlibrary loan.

OCLC plans future expansion into circulation, information retrieval, and technical processing (i.e., acquisitions, including book ordering). The latter service will be next in line after the completion of present work on serials cataloging and check-in, according to OCLC announcements.

OCLC's impact has been enormous. Its meteoric rise came from several things: first, its planners had a clear view of their objectives and pursued them with diligence; second, OCLC's connection with the higher echelons of the Ohio academic community enabled it to obtain generous and absolutely critical support from state funds for higher education; third, its early entry into the network field allowed it to compete effectively for federal and private foundation grants; and fourth, its success has enabled it to continue rapid expansion through contracts from other networks that now supply, in the aggregate, more financial support than do the Ohio members.[2]

In addition to OCLC, several other networks, regional in scope, have been established. A regional network functions as a clearinghouse for the services available from OCLC. There is, however, a greater mutuality in the relationship than this statement implies for without the regional networks OCLC could not have achieved its present size and preeminence as rapidly as it has. Regional networks handle many of the start-up and day-to-day operations for member libraries the whole of which would overwhelm one central facility. Today, hundreds of libraries, availing themselves of the advantages of the new technology, are able to reduce processing costs through network participation. The file of shared records in the data base is larger and more rapidly available than that accessible in conventional printed

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[2]Markuson, "Library Networks," pp. 36-37.

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sources. Cataloging copy for more titles means that new publications can be processed more economically and can more quickly be put into the hands of the library user.

The success enjoyed by regional networks has led to plans for the development of a national library network. The Library of Congress, the Council on Library Resources, the National Commission on Libraries and Information Science, the National Bureau of Standards, the Ohio College Library Center, the Committee on the Coordination of Bibliographic Control, to name but a few involved organizations, are currently at work on such a design. The twin objectives of a national network will be: (1) to make the vast bibliographical resources of the United States widely known and accessible to all who may require them and (2) to reduce the rate of increase in per-unit costs of library operations. It will be an on-line system providing entree both to processing and eventually to retrieval data bases.

While the exact form of the national network has not fully evolved, it is certain that the Library of Congress will continue to be one of the key suppliers of bibliographical information in machine-readable form. By 1980-81, LC will have fully automated its cataloging production including non-Roman alphabet material and all formats. LC will also provide some of the standards needed to enable libraries to interact effectively with a national network. Such standards include authority files for name and subject headings and for cross references. Further standardization to facilitate querying all segments of the network will include internal formats, processing procedures and query languages.

A national network planning document is now being prepared by representatives of major active network components in the United States. Their initial report is expected to be available for comment by the library community sometime in 1977. Preliminary indications are that a portion of the national net-

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work will have computer-to-computer hook-up to LC while LC itself will be connected with regional centers rather than with individual libraries. By using the standard query languages, inter-regional connections will make it possible for an individual library to query the regional, LC or other member data bases.

The technology is now available to make such a network a reality. Critical network components are being identified and designed. Continued rapid change, improved equipment and lower costs are indications that the system may be operational by the mid-1980s, if not before.

III. Library Networks and Duke University Library: Anticipated Gains

1. Cataloging

Duke University Library continues to use National Union Catalogs and LC depository cards as the main sources of shared cataloging data. These aids, while effective in the 1950s and 1960s, today supply copy for only fifty percent of the publications added to the collections. Other libraries subscribing to OCLC or to the Southeastern Library Network report a finding rate of seventy-five to ninety-five percent for new acquisitions. It follows, therefore, that Duke University pays professional catalogers to do twenty-five to forty-five percent more original cataloging than appears necessary. The same work could be done for a smaller outlay by using members of the support staff. This projected achievement is based upon a combination of two elements: (1) lower pay levels for support staff and (2) the increased availability of shared cataloging data. As it is, Duke continues with a manual system that has operated without significant change since the 1960s.

An on-line hook-up functions this way. Terminals within participating libraries have direct access to the data base in Ohio via the regional clearinghouse (in this area the Southeastern Library Network headquartered in

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Atlanta). A staff member would type in a specified sequence of numbers or letters which would trigger a search for the desired description in a data base of more than 2.5 million entries. If found, the bibliographical record would be displayed on a screen in front of the operator. The record could then be compared with the publication, edited to meet local requirements, if necessary, and an order placed immediately on the machine for the set of printed cards. The member library's symbol would be automatically added to the union list of libraries holding that title. The card set would be imprinted and shipped out so as to arrive in the library within one week. Cards would be overtyped and ready for filing according to a unique profile of the library's card needs which is programmed into the network system.

A professional cataloger doing original work can process an average of one and a half to two books per hour; a library assistant, with cataloging copy, an average of three and a half to four books per hour. Currently Duke University Library locates copy in the manually maintained sources for fifty percent of new titles or 27,000 of the annual average of 55,000 monographic publications processed. In a network situation Duke could expect to find copy for nearly 47,000 titles. This means that 20,000 additional titles could be processed by library assistants (support staff personnel) rather than by professional catalogers.

Joining a network would also obviate the necessity of maintaining the manual depository file of Library of Congress cards. To maintain this file it costs approximately $13,000[3] annually in student hours. Even so, frequent crash projects using full time staff are required to bring it up-to-date. This is due to backlogs that build up during holidays and in the summertime when

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[3]Some of the student hours are provided by the work study program so that the actual cost is less in terms of actual dollars.

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students are either away entirely or available in smaller numbers.

The anticipated change in the way cataloging will be done and the places that will do it, especially LC, will have a significant impact on the cataloging staff. Careful planning to absorb that impact is essential. More professional cataloging time can be made available to process backlogged material for which LC or other cataloging copy is not and will not be available. Through attrition, professional cataloging positions can gradually be reduced in number and converted to support staff levels. Some professional staff positions can be released to public service departments to supplement the very limited service currently offered to students and faculty. When other needs are met, additional vacancies can be used to reallocate saved salaries to pay for network participation. Several libraries report significant reductions in the number of professional cataloging positions after the first two years of full operation. In some libraries the reduction in the number of professional cataloging positions has been only a few while in others it has amounted to as many as ten to fifteen.

Should Duke University Library enter a library network, it would represent a new level of technological sophistication, but not a new attitude toward library cooperation. For example, in 1932 Duke University and the University of North Carolina in Chapel Hill pioneered a joint program to share resources and to avoid duplication in the two collections whenever possible. This collegial spirit continues to flourish forty-five years later. The opportunity now before Duke University Library comes in the form of a heightened level of cooperation over a wider area than was heretofore possible.

In all probability Duke University would seek to contract with the Southeastern Library Network (hereinafter designated SOLINET). SOLINET, with more than 150 members libraries of all types, is the regional network for the ten states in the Southeastern United States. It coordinates the activities of southeastern libraries in their use of shared cataloging and serves as the nexus for interaction with OCLC. There is no regional data base at this time

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although an arrangement to store the records of member libraries in a regional mini-computer is in the planning stages. The network serves as the means for improved and expanded services for fee paying member libraries. Its main function presently is to assist with acquisitions, cataloging and the production of bibliographical records in card and machine-readable formats. Providing faster, better, more cost effective service, the network coordinates a collective effort which, were it undertaken by individual libraries, would be prohibitively expensive. Next to OCLC, SOLINET is the largest regional network and could be and should be playing a significant role in the development of a national network.

2. Card production

At the present time cataloging cards for Duke University Library are produced entirely by the Library itself. The process includes preparation of a master card, printing card sets, overtyping added entries, alphabetizing card sets for Perkins Library and for the branch and departmental libraries, and revising these procedures. A recurring problem with this arrangement is the lack of uniform quality in the cards produced. In a network full card sets, prearranged for filing into each segment of the Library's card catalogs, would be provided automatically. An additional benefit is the provision of an archival computer tape of Duke records, the basis for future development of bibliographical catalogs, on-line or on microform, as well as for participation in other external systems and services and in a national network. Approximately $45,000 is required annually in staff time, using the production hourly pay rate as a base, to do these in-house card production procedures manually. Moreover, the cost of staff for actually printing the cards, $1,752, plus the cost of card stock, $27,500, amounts annually to another $29,252.

The State University of New York at Albany conducted a three-year study of the impact of network participation on the clerical or support staff. The

results were issued in a report from which we learn the following:

> The effect of OCLC has been even more striking on the workload of the clerical staff formerly involved with the production of card sets. Because virtually all monographic cataloging, excluding non-Roman alphabet and non-print materials, is done on OCLC, the number of card sets typed, sorted and alphabetized for filing in the catalog has been reduced by two-thirds. This staggering reduction in workload has made it possible to deploy staff to other activities long neglected in the press to keep on top of the cataloging of current acquisitions. The number of catalog maintenance corrections (changing of obsolete subject headings, typographical errors, etc.) was increased in 1974/75 by four times the number of corrections in 1973/74. Man-hours were available to triple the number of in-house repairs to worn materials in the collection. With the advent of OCLC, for the first time in rememberable history, there is no filing backlog.[3]

It is anticipated that Duke University Library could realize at least an equal reduction in card production costs and manual procedures. Beyond that, some clerical staff could be transferred to catalog maintenance, an activity that is virtually non-existent except for filing cards. SUNY at Albany also reported the possibility of the permanent reassignment of at least four full time equivalent clerical staff to other areas of the library at the end of the third year. Similar reduction in the time spent on repetitive manual procedures could be realized at Duke University Library, thereby permitting reassignment of some members of the staff to other areas of the library.

3. Bibliographical searching

Presently bibliographical searchers have to check in up to fifteen locations in card files and book catalogs for each new title in an attempt to verify the form of entry for ordering purposes and to attempt to locate cataloging copy. Searching time through an on-line data base would be significantly reduced while the greater number of entries available would result in an appreciable increase in the number of records found. Several benefits

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[3] State University of New York at Albany. Annual Report of the University Libraries, June 1, 1974-May 31, 1975. p.15.

would thereby accrue: (1) the preorder searching of titles and the release of actual orders would be expedited; (2) the inauguration of full precatalog searching, now a function of the cataloging staff, would be possible; (3) the more rapid processing of new titles with full sets of catalog cards would become a reality; and (4) the filing of those cards would be handled with greater dispatch thus making new materials known and available to users with minimal delay.

4. Serials

A new element, CONSER (Conversion of Serials), has recently been added to SOLINET/OCLC network services. For the first time cataloging data have been made available for serial titles as well as for monographs. Plans have been made to locate a terminal in the Serials Department of Perkins Library so that the staff can benefit from a rapidly expanding source of copy for serial cataloging records on-line such as that provided by the National Library of Canada, LC, and several other American research libraries.

5. Documents

The United States Government publishes nearly 40,000 titles every year. Duke University Library today has very limited staff to catalog such official documents; indeed, it amounts to only half-time of one full time professional cataloger. As a result, only a fraction of the material received by the Library as an officially designated Government Documents Depository Library can be cataloged. Such a condition results in limited availability of this primary source material. Plans have been made to locate a terminal in the Public Documents Department of Perkins Library to assist with both the acquisition and the cataloging of United States Government documents. Recently the Government Printing Office began entering cataloging copy directly into the OCLC data base, the source of on-line data for SOLINET. Network participation will not only provide access to the full cataloging output of the Government Printing Office,

it will also serve to assist the staff of the Public Documents Department to acquire this material, to record its receipt under proper entry for more rapid check-in, and to identify titles on standing order which have not been received.

6. Interlibrary loan

Interlibrary loan procedures will be enhanced by participation in a network although it is not anticipated that there will be any immediate impact in terms of borrowing. It is reasonable to assume that there will be a greater demand by scholars at other libraries for Duke's materials. This is so because of the richness and size of existing collections and the excellence of the acquisitions. Area libraries are greatly interested in the possibility of Duke's contracting with SOLINET for the advantages that will accrue to all network participants in the Southeast in terms of an expanded data base distinguished by records that are prized for their variability and the quality of the cataloging.

Another aspect of interlibrary cooperation that would profit from Duke University's participation in SOLINET concerns the operation of the North Carolina Union Catalog. It is housed in the State Library and is maintained in two modes, the manual microfilm catalog produced from card copy and the on-line SOLINET file. Inasmuch as Duke University Library is not a member of the regional network, all of the state university libraries, and other libraries in the state which are members of SOLINET, do not have ready access to Duke records nor does Duke have ready access to theirs. Until new supplements are issued a library wanting to know Duke's recent holdings must call the State Library. Duke is disadvantaged, too, because it does not have access to an on-line system which alone provides the fullest and most up-to-date records of the holdings of other North Carolina libraries. In face of the reality of a dwindling supply of dollars for new acquisitions, this vehicle of resource

sharing assumes added significance.

Network participation would do away with the cost of producing two copies of each card for new acquisitions, one for the North Carolina Union Catalog and one for the University of North Carolina at Chapel Hill. Duke University Library was forced for lack of staff to discontinue its file of UNC records in December 1975. SOLINET membership would again give the Library access to those records which are essential to collection development policies, interlibrary loan programs, and cataloging purposes.

7. Law and Medical Center Libraries

The Law Library can realize many of the same benefits in terms of reduced costs and increased services in the area of cataloging that are forecast for Perkins Library. It is possible to project proportionate savings in typing, revision, card production and in the elimination of repetitive manual routines. Plans have been made for this library to use the technical equipment to be located in Perkins Library.

The Medical Center Library has access to Medline, the data base of the National Library of Medicine. No major benefit sufficient to cause a transfer to SOLINET is seen at this time although the proposed system does not preclude their doing so in the future.

IV. A Matter of Timing

Duke University Library has delayed joining a network for a variety of reasons. Among them are the steep membership fee, the need to reorganize internal manual procedures, and a change in library administration. It appears, however, that now is an advantageous time to make such a move. SOLINET's internal startup problems have been greatly reduced and the system is rapidly expanding throughout the Southeast. An impressive data base, not only that of LC, but of hundreds of other libraries offering multiple types of

materials, is now available. The Library has made or is making the internal changes needed to modernize and streamline technical services manual procedures to the point where network participation can be considered both beneficial and feasible. The potential reduction in costs and the adjustments in staffing made possible by adapting machine procedures indicates that network participation, in spite of its expense, will be a gain in the long run.

While it is proposed that Duke University Library enter SOLINET at this time, it may be deemed advantageous in the future to move to another segment of the as yet undefined national network. An alternative that is developing is the Research Libraries Group (RLG), a consortium of Harvard, Yale and Columbia Universities and the Research Branch of the New York Public Library with direct data transmission links to LC. Participating libraries will be enabled automatically to search beyond their data bases into the computerized files of LC. When found, the machinery will transfer records to the consortium's data base for future use. The staff of RLG indicates that they expect to have a fully operational system within the next four years at which time they anticipate adding other research libraries. There is no question but that Duke University Library should plan to join this group eventually or one similar to it. RLG officers have advised that in the interim the Library join OCLC, possibly through SOLINET, to gain as broad experience as possible using on-line bibliographical systems. The provision of archival tapes, a network service, will facilitate the manipulation of Duke records so that they may be added without complication to another data base. Having in hand a sizeable file of quality records when approaching a network for membership will enhance the likelihood that Duke University Library will be accepted.

The time has come for Duke University Library to move with resolution. Plainly stated, in its present state it is unable to assume the position of leadership in network development expected of the largest research library in

the Southeast with the finest collection in this ten-state region. While 150 libraries affiliated with SOLINET have gained library network and automation experience to enable them to interact effectively in a national network, Duke University Library, tied to manual procedures, is several years behind. If the Library does not join a network, ultimately students, faculty and other library users will be penalized. Without participation in a library network, they will be denied access not only to major retrieval and processing data bases and services, but, as well, access to the materials they contain. Participation now will enable Duke University Library to catch up with other libraries in North Carolina and the Southeast, gain experience and competence in network and automation activity, and prepare itself for the advent of a national network. It will also afford the librarians of Duke University an opportunity to actively assist in the development of a national network rather than to sit back and be told how arrangements, having multiple impacts on the Library, will be established and implemented.

Finally, it must be said that without network participation Duke University Library will not be able to continue the present level of operations. That level is not altogether desirable even now. During fiscal 1975-76 seven staff positions were blocked and later deleted from the budget. Three of them were professional cataloging positions. Labor costs continue to rise. Concurrently, the significant increase in the rate of acquisition of materials, a direct outgrowth of the information explosion resulting in increased publishing nationally and internationally of government documents, serials and monographs, creates the need for additional staff, not less. The only effective way of processing a growing volume of publications on a timely basis without sizeable additions to the staff appears to be through participation in a library network using shared resources. If funding for such a venture is not forthcoming, the backlog of unprocessed materials will grow significantly, further delaying their

availability to the Library's users. To contemplate further reductions in the level of operations is tantamount to compromising both the Library's opportunities for service and its position among the nation's principal research facilities.

V. Costs

1. Equipment

Interaction with the data base requires several items of equipment. Included are seven terminals, five for cataloging monographs, one for serials, and one for public documents. As previously stated, one of the terminals would be made available to the staff of the Law Library. In addition are three Printers to facilitate the verification of main or author entry and classification numbers in the Library's authority files. While a part of this function would be reduced were the Library to convert from the Dewey Decimal to the Library of Congress classification scheme, it is doubtful that such a conversion, were it ordered, could be realized before 1980 or 1981. Besides facilitating classification, Printers provide the user of the terminal with a copy of the record as it is viewed on the screen. Related terminal equipment includes MODEMs and station terminators which connect the input data to a telephone line for transmission to the data center. Work stations furnished with tables and chairs and necessary electrical connections complete the list of basic physical and technological requirements. It is expected that the equipment available now will satisfactorily encompass all changes in network development for the next five to ten years.

2. Fees

The initial fee is set at $1,500 or one and one-half percent of one year's materials budget, based on a three-year average, whichever is larger. This amounts to $19,000 for the Perkins Library system and an additional $2,000 for

the Law Library. Thereafter, the annual membership costs $150 each for the Perkins system and the Law Library. There is a First Time Use fee which is the cost to SOLINET and OCLC for producing catalog cards and related services. In addition, there is a card stock figure of $0.043 per card. Ordinarily, fifteen cards per set are required. Related fees are listed in Appendix 2.

If this proposal is funded, Duke University Library would be prepared to submit an application to SOLINET in January 1978. The one-time start-up costs (initial membership fee, equipment, and furniture), occuring during the first six months, appear in Appendix 1. The time from January to June 1978 would involve installation of equipment, training the staff and adjusting to network operations. On-going operational costs, from July to December 1978, have been figured at two-thirds the projected annual rate of operation for this six-months period. This request covers funding for the next two years, that is calendar 1979 and 1980. After that operating expenses would be funded from the annual Library budget. Once a commitment has been made, it would not be feasible to regress to a manual system. The Universityshould plan now to assume on-going costs.

MICHIGAN STATE UNIVERSITY LIBRARIES

April 15, 1975

TO: Richard E. Chapin

FROM: Carolyn J. McMillen

SUBJECT: OCLC - Recommendation and Statement

The Technical Services OCLC Study Committee (ad hoc), formed in June 1974, has presented to me its recommendation that "the MSU Libraries join the Ohio College Library Center through the Michigan Library Consortium at the soonest possible date." (This memo is attached as Appendix A.). I concur with the committee's recommendation.

The stated objectives of OCLC are to increase availability of library resources while lowering the rate-of-rise of per-unit library costs. All reports from libraries presently on-line with OCLC reflect that these objectives are being met - after approximately two to three years, the number of staff positions necessary for the full processing of titles can be decreased. The rising costs of labor are replaced by the relatively more stable costs of a computerized bibliographic data base system.

In my estimation, the first-year costs of our tie-in to OCLC should be considered basically as an add-on cost. We have no "fat" to cut to pay for the first year of operation. If a portion of the supplemental "year-end funds" could be designated for our membership in OCLC, 1975/76, we could begin on a solid base. The first year's

cost can be projected as $70,425.00 (See Appendix B.). Following a year of actual experience with the on-line OCLC system, projections for the second year of operation will be based on statistics, rather than on estimated use of the data base and "first-time hits." It will also be possible to begin to estimate with some certainty the rate at which card typing hours can be decreased.

There will be certain savings which can be specified now for 1976/77:

CARDSET Subscription	$ 5,000.00
Xerox Microprinter costs (Est. -1974/75 costs; this amount will vary, depending upon how many months of 1975/76 we use CARDSET at full operation)	2,967.00
1-GTIII (Typing Unit) 1975/76 salary)	6,911.00
1-Original Cat. Librarian (Contin. saving)	11,700.00
40 hrs./wk.-Stu. Typists (part continuing)	4,000.00
Cost of 10-up Card Stock (Est. at 86% of 44,000 titles cataloged)	1,892.00
	$32,470.00

Add-on funds required for first year 1975/76:	approx.	$55,000.00
*Add-on funds required for 1976/77:	"	35,000.00
Add-on funds required for 1977/78:	"	11,000.00

*As of July 1976, the Reclassification Program, within the Cataloging Division will be terminated. (Present salary costs for 1-Librarian and 2-Clerks amount to $25,678.00). The Library may continue to budget for these positions, assigning the staff to other duties in the Library system, or the positions could be eliminated completely or partially. Whatever savings accrue, if any, could be applied to the 1976/77 costs of OCLC - to be considered a one-year savings only.

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By the end of the third full-year of operation, the Library should require no add-on funding for the activities involved with the OCLC on-line shared resources data base. The data base will have grown by another 800,000 plus titles and we will be able to project our staff requirements for the original cataloging work load for the next several years. The potential for our use of a data base receiving original cataloging input from such libraries as The Library of Congress, Yale, Harvard, Cornell, Princeton, and the University of Michigan, to name only a few, is tremendous.

CJMc/dw

MSU Library's Participation in the OCLC System:

The basic goal of our tie-in with OCLC is the establishment of an on-line computer-assisted LC and original cataloging and card production capability for monographs and serials, which will maintain a level of quality acceptable to the Michigan State University Libraries. The resultant system will enable the MSU Libraries to participate in regional and/or national networks for resource sharing.

In order to initiate and develop this system, our objectives must be:

1. Procurement and installation of the OCLC-Networks resources and equipment essential to the realization of the production capability.

2. Documentation and maintenance of the system from development into the production state.

3. Training of appropriate staff to operate the system.

4. Creation of machine-readable records in standard MARC II format for MSU Libraries cataloging produced under this system.

5. Organization, management and implementation required to attain the above objectives.

APPLICATIONS OF SYSTEM

This system of shared cataloging facility is applicable now to several units within Technical Services. It applies to LC Processing, Searching (Pre-Order and Pre-Cataloging), Catalog Card Production, Descriptive Cataloging and Subject Analysis and to Inter-Library Loan, outside of Technical Services. Future developments at OCLC will expand its applicability to Serials Control, Acquisitions, (including accounting and in-process controls). Circulation Control, and Remote Catalog Access by library user. The bibliographic data base for cataloging and resource sharing is limited at any one time to the coverage of the OCLC System Catalog Data Base on-line at that time (1,185,737 total catalog records on-line as of February 21, 1975). Our participation in this computer-communications-data base network is constrained by the policies, procedures, rules and authority of the governing OCLC and Michigan Library Consortium organizations. A degree of controlled flexibility is possible, nowever, to individual network members (e.g., our individual profile for card set production).

Requirement for membership in OCLC is that a library belong to a consortium or network apart from OCLC. The Michigan Library Consortium was formally incorporated in the State of Michigan on April 17, 1974. In June 1974, the MSU Board of Trustees approved the recommendation

that MSU's Library join the Michigan Library Consortium. On February 5, 1975, a contract was signed by the OCLC and the Michigan Library Consortium thus enabling Michigan libraries, which are members of the Consortium, to join OCLC.

There are a great many steps to be taken before the establishment of our tie-in to OCLC can bring us the required production capability. These activities and tasks will be referred to as Project Control. The term, "project" will be applied only until such time as we are in actual "control" of the new system.

PROJECT CONTROL

Activities will be controlled, to the greatest extent possible, by planning and scheduling and continuous maintenance and review. These activities will include: development of library card set profile and cataloging work form; establishment of an Advisory Committee for Project Control; development of plans for required reorganization of workflows and plans for physical location of staff and equipment; determination of acceptable staffing level and job descriptions and selection of appropriate staff; continued communication with Library staff, with particular emphasis on Technical Services staff; procurement and installation of the OCLC resources and facilities; training of staff; full documentation of each step taken.

1. Development of Required Card Set Profile and Cataloging Work Form.

   A cataloging work form was developed by the Technical Services Ad Hoc OCLC Study Committee and has been in use in the Cataloging Division since January 1975. This form can be easily adapted for use by our terminal operators when on-line with OCLC for searching, LC processing or original cataloging. (See Appendix C).

   A small group of Cataloging Division staff has spent approximately sixteen hours each in developing the "profile" for card set production. Three members of the staff attended a Profiling Workshop, held here at MSU on March 31, directed by the Network Coordinator for the Michigan Library Consortium. The "profile" for MSU Libraries will be completed by the MLC Network Coordinator in consultation with our staff during a scheduled April 28th meeting at the MSU Library.

2. Establishment of an Advisory Committee for Project Control.

   The Technical Services OCLC Study Committee (ad hoc) completed its assignment with the presentation of its recommendations to the Assistant Director on April 7, 1975. An Advisory Committee for Project Control will be established which will consist of the supervisors (or designee) of the organizational units principally involved with or affected by the installation of the OCLC system. (See Appendix D).

3. Determination of Acceptable Staffing Level; Job Descriptions; and Selection of Appropriate Staff.

We will, of course, be somewhat constrained in our approach to these areas of concern. The capability of the OCLC system will be directed initially at automating the present LC (MARC) processing activity. That staff, already trained in LC processing, can serve as the "core" staff to get us started. The present LC Section includes one Catalog Librarian and a Clerical/Technical Staff of 4 and ½ (FTE). The C/T Staff consists of 1-Clerk VI and 3½-Clerk IV. The fact that the duties and responsibilities of these C/T Staff Members will change is obvious. Since new skills must be learned in order to function as required by the system, the Clerk IV classification must be changed. All C/T's required to handle LC processing plus OCLC terminal operation, must be reclassified to Clerk VI. (See Appendix (E) for draft of job description). We cannot divide these tasks, in order to avoid such reclassifications, because LC (MARC) processing must be handled at the terminal in order to take full advantage of the system). This is the obvious change in staffing patterns. As new workflow patterns are determined, work assignments will be altered to meet the requirements of the OCLC system. We will, for example, need to define terminal operator, or input clerk (staff member who inputs original cataloging data from the cataloging work form), and re-define our searching staff duties.

Certain realities of our present staffing situation must be faced. First of all, until we have actually had some experience in the new production system, our staffing levels can be estimates only. Secondly, we may find that position descriptions written during the "project control" stage will have to be rewritten at the time a position becomes vacant, in order to secure staff with the particular skills, knowledge, etc., required in the new system.

4. Development of Plans for Reorganization of Workflows and Physical Relocation of Staff and Equipment.

Revised workflows will be developed, as much as possible, prior to our tie-in with OCLC. It is probable, however, that after we have had some actual experience with the system, these workflows will have to be further defined and revised. Staff and equipment cannot, of course, be relocated until our initial workflows have been developed. The interfacing of searching and processing/cataloging will require very careful planning in order to achieve as efficient an operation as possible.

In connection with this, we must carefully consider the role of our present CARDSET system. The subscription is paid through September 1975. We could save the cost of renewal if we are tied-in to OCLC during July. However, since our searching, LC processing and card-typing units are geared to the CARDSET system,

we cannot cease present operations while waiting to go on-line. Until we are certain of our production capability with OCLC we cannot give up the CARDSET system. The transition from our present operation to that of the OCLC on-line system can simply not occur in a month or so. Staff cannot be trained until the terminals and communication lines are installed. Production will not magically reach full levels by turning off CARDSET and tuning into OCLC. If, for example, we do not get tied-in to OCLC until September 1975 or January 1976, it will be imperative for us to retain the CARDSET system in order to continue processing our normal workload of new titles.

5. Communication.

Once the decision is made to join OCLC, a major effort will be made to bring to the Technical Services staff the many details of the new system. All Section Heads, including the C/T Supervisors in the Cataloging Division, have read some of the literature relating to the OCLC system, and are aware of what the system is and what it can do for us. Communication with the Library Faculty is considered essential and every effort will be made by Technical Services to keep all informed as Project Control develops and moves forward. It will be the responsibility of the Department Head to keep the central administration fully informed as to project status, progress, planning and problems.

Appendix A

MICHIGAN STATE UNIVERSITY
LIBRARY

7 April 1975

MEMO:

TO: Miss Carolyn McMillen

FROM: Technical Services OCLC Study Committee

Our investigation indicates that the bibliographic services of the Ohio College Library Center are capable of fulfilling many of the bibliographic needs of the MSU Libraries in a more efficient manner, both technically and economically, than our present system. This has been the experience of many libraries of various sizes who are OCLC members.

OCLC can immediately provide the MSU Libraries with shared cataloging of monographs and serials, card production, access to the data base for Inter-Library Loan and Technical Services searching and added efficiency for catalog maintenance.

OCLC can potentially provide serial control, direct reader access to the data base, automated acquisitions procedures, Inter-Library Loan direct signalling, and other projected applications. By joining OCLC, the MSU Libraries would join a growing number of libraries forming an informal national library network and gain all the benefits membership in such a network implies. Our participation in OCLC would make possible a fuller role in programs of the Michigan Library Consortium.

Because the OCLC system differs greatly from our present system, the initial period of participation would be one with many problems of adjustment. In order to maintain the flow of materials to the Libraries' users, it would be essential to maintain in operation the staff, tools (including Cardset) and procedures of our present system until an orderly transition could be made. The total cost of OCLC membership can not be taken from funds currently allocated to Technical Services without resulting in disruption of services.

The Technical Services OCLC Study Committee unanimously recommends that the Michigan State University Libraries join the Ohio College Library Center through the Michigan Library Consortium at the soonest possible date.

Linda J. Bills
Linda Bills

Leonard E. Cluley
Leonard Cluley

Roger G. Gifford
Roger G. Gifford

Missy Hahn
Missy Hahn

Linda Hansen
Linda Hansen

Helen Jones
Helen Jones

Tamara Miller
Tamara Miller

Stephanie Perentesis
Stephanie Perentesis

Lucille Tolman
Lucille Tolman

TM:ec

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OCLC - First year costs. (Based on estimated searching and cataloging for 1975/76)

1975/76

27,500 (no. of titles from OCLC system) x $2.00 ea.	$ 55,000.00
(16,500 - no. of titles cataloged originally and added to OCLC Data Base)	
44,000 (titles) x 8 (cds. per title) x $.034 per cd.	11,968.00
75,000 (searches) @$.022 each	1,650.00
	$ 68,618.00
Reclassification of 3.5 FTE from Clerk IV to Clerk VI	1,807.00
	$ 70,425.00
	* (less 6% if pre-paid)
1-Original Catalog Librarian Position (not to be filled)	-11,700.00
	$ 58,725.00
20 Student Typing Hours per week (estimated only; to be decreased throughout 1975/76)	- 2,000.00
	$ 56,725.00

Appendix C

[illegible]	
TITLE	
EDITION	
IMPRINT	
COLLATION	
SERIES	
NOTES	
SUBJECTS	
ADDED ENTRIES	TITLE
[illegible] TRACINGS	SERIES DO NOT USE
[illegible] NUMBER	

	AFRICANA		LATIN AMERICAN COLL.		STAMP FOR CONTENTS		STAMP FOR OTHER EDITIONS
	ASIA COLLECTION		URBAN AFFAIRS		STAMP FOR HOLDINGS		AX LINE OUT TRACINGS

HOLDINGS/LOCATIONS	AX PENCIL LIBRARY HAS	SPECIAL INSTRUCTIONS		
CTS FOR OTHER LOCATIONS	NO. OF UNIT CARDS	SUBSTITUTION	INITIALS	DATE

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Advisory Committee for Project Control.

This group will serve as a task force or ad hoc committee and will represent the organizational units principally involved with or affected by the installation of the OCLC system.

The Responsibilities of the Advisory Committee will be:

a. To assist in the development of plans for the required reorganization of workflows and staffing patterns.

b. To assist in the development of plans for the physical relocation of staff and equipment.

c. Participation in all project discussions concerned with the implementation of the new system.

d. To assist in the implementation of all procedural changes required for the installation and operation of the OCLC system.

e. To assist in the essential task of maintaining adequate communication to all staff involved in the implementation of procedural changes.

Appendix E

Cataloging Division

LC Section

JOB DESCRIPTION

Class Title: L.C. Processor/OCLC Terminal Operator (VI)

Function of Job: To process, under general supervision, books with complete or adaptable LC copy, by means of the OCLC on-line cataloging system.

Characteristic Duties and Responsibilities:

1. Process books.
   A. Check OCLC MARC or contributor supplied proof against book for accuracy of detail, correcting proof as necessary.
   B. Do simple descriptive cataloging when classification and subject headings are supplied.
   C. Input non-MARC LC cataloging available for books to the data base.
   D. Check entries, or supervise student checking, in appropriate files.
2. Send error and update reports to OCLC as necessary.
3. Train and supervise student assistants, as necessary.
4. File into public and internal catalogs as assigned.
5. Perform other related duties as assigned.

Minimum Acceptable Qualifications:

Personal qualifications:
- Ability to make decisions.
- Aptitude for details and problem-solving.
- Ability to organize work flow for maximum efficiency of time available.
- Ability to function well under pressure of heavy work loads.

Education:
- High school graduate.
- Elementary reading knowledge of at least one principal Western European language (other than English)

Business skills:
- Filing.
- Some typing skill.
- Prior experience doing LC processing without revision.

Additional Desirable Qualifications:

- College graduate.
- Knowledge of additional foreign languages.
- Familiarity with machine cataloging systems.

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Cataloging. In operations such as cataloging, the use of such systems can help reduce costs even more substantially. The most successful on-line systems allow dozens and even hundreds of libraries to share the work, so that only one library need catalog a title and the rest can use the results without having to repeat the effort. In one recent study of the largest such system (the Ohio College Library Center), 91 percent of the users queried felt that the system allowed catalogers to produce more work per unit of time, and 95 percent said that clerical workers could increase production per unit of time.[20] In another recent study, which covered all of the 47 original members of OCLC, the author concluded that "original" cataloging had been all but eliminated for the smaller libraries, and reduced to well below 20 percent of the total cataloging effort for other types. The time required to catalog books and to produce sets of catalog cards had been reduced in 91 percent of these libraries.[21]

The University of California libraries are now experimenting with two such systems, OCLC and a similar but smaller system based at Stanford University, called BALLOTS (for Bibliographic Automation of Large Libraries using an On-line Time-sharing System). The Ohio College Library Center began as a non-profit corporation in 1967. On-line cataloging services began in August 1971, and the number of users has grown steadily since that time. In 1973, the OCLC membership voted to allow libraries outside of Ohio to participate, and at present the system is used by over 800 libraries in 44 states. In the data base are almost 3 million records, including all of the MARC (Machine-Readable Cataloging) records from the Library of Congress. Participants key in a few letters or numbers (typically a few letters of the author's name and a few letters of the title) for the work they wish to process, and in a few seconds records corresponding to this "search key" are displayed on the screen of the terminal.

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[20] Barbara Evans Markuson, "The Ohio College Library Center," Library Technology Reports, v. 12, no. 1 (January 1976), pp. 92-93.

[21] Joe A. Hewitt, "The Impact of OCLC," American Libraries, v. 7, no. 5 (May 1976), pp. 272-273.

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The operator may accept a record as displayed, or modify any part of it for his own purposes, then press a key to order cards. The cards themselves are produced overnight at the center's facilities in Columbus, and are then shipped to the library by mail; if cataloging copy is needed immediately, however, it can be printed out on one of several types of printers that can be hooked to the system. Participating libraries now catalog over 200,000 titles a week on the system, and almost a million and a half catalog cards are printed each week. Symbols of libraries holding each title are also shown on the screen, so the system can (and is) used for interlibrary loan, and (as noted below) there are other functions planned as well.

Despite the obvious advantages--the size of the data base, the high probability that a needed record can be found in the data base, and the opportunity for resource-sharing with other participants--there are problems with OCLC as well. For one thing, the very size of the system is a disadvantage as well as an advantage. Rapid growth has meant that the computers involved have frequently been unable to handle the load efficiently, and "response time"--the time between sending a command to the computer and receiving the response on the screen, a time during which the operator is essentially idle --has on numerous occasions risen from the "normal" seven or eight seconds to several minutes or more. This has led to "feathering"--cutting selected participants off the air during certain periods of the day--and moratoriums on new installations. A more serious drawback is that there is no procedure for preventing the creation of two or more slightly different records for the same book, either by inadvertence or deliberately. Many of the records in the data base are duplicates of this type, and many records are also poorly edited or constructed, so that most users find it necessary to construct a list of libraries whose cataloging they will accept and those they will not.

BALLOTS also began in 1967, but until recently was used by only one institution (Stanford University), and by only some of the libraries at that institution. In 1975, seven public libraries began using it on a partial basis, employing a teletype terminal to search

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the data base. Other libraries have been added since that time, some using teletype equipment and others using visual display terminals through the TYMNET commercial communications system, or over regular telephone lines. In 1977, there were 33 institutions using the system to one degree or another.

The data base for the system consists primarily of MARC records and records added by Stanford's cataloging staff. Until July 1976, shared cataloging was not possible, because the system could not accept and store records from other institutions. Beginning in that month, however, UC Berkeley became the first library outside Stanford to make use of the system on a shared cataloging basis, adding records to the file and (through the use of a program contributed by the University of California's Universitywide Library Automation Program) receiving catalog cards in return, much as in the OCLC system. By 1977, 24 libraries were on-line to BALLOTS, cataloging approximately 5,000 titles per week.

The greatest strength of the BALLOTS system is its ability to allow searching by a wide variety of data elements, using so-called "natural language"--that is, the actual words of a title or author, or truncated portions of them--and to combine these elements with other data elements in a "Boolean" search technique, as described in Chapter V. Subject searches can also be made, a capacity that OCLC has not yet incorporated. Like OCLC, however, BALLOTS also has its problems. It, too, has occasionally been plagued with poor response time, although in the case of BALLOTS this stems from a different source which is itself a problem: the fact that the system must share a large computer which at any one time is processing a number of other jobs for Stanford University. The size of the data base is much smaller than OCLC's, although academic libraries that have used both find almost as high a percentage of records desired in BALLOTS as in OCLC. As BALLOTS has emerged to network status, its costs have been difficult to pinpoint, and only recently have libraries been able to obtain firm prices in library terms--that is, per catalog card or title cataloged. New rates were announced in July 1976, however, and as the system develops its network organization and equipment this situation may be expected to stabilize.

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At present, the OCLC system is being used on a trial basis at UC San Diego, UCLA, UC Irvine and UC Riverside, and BALLOTS is being used experimentally at UC Berkeley, UCLA and UC Davis. These trial installations will enable the University to collect information on the actual costs and efficiency of each system, and it is anticipated that, based on this information, a final decision will be made in 1977 as to which system will be chosen for Universitywide use.

In addition to improving the productivity of the cataloging operation and lowering operating costs in this area, the system chosen will also serve as the primary mechanism for constructing the University's machine-readable data base to be consulted by library users in lieu of the card catalog, as discussed in Chapter V. By 1981, all campuses should be using the system to perform cataloging in Roman alphabet languages, and the records thus created will be automatically added to the data base for public use. At that point, then, only the task of converting older records will remain, and many of these are already in machine-readable form. By the end of 1978/79, over a million records will exist, and the ongoing data base conversion project will add another 5 million by 1985/86.

Serials. The University's data base of bibliographic information on serial titles must also be constructed, because this information will be needed by library users as well. The University has already done much towards building this file. Each campus has converted the majority of its bibliographic information on serials into machine-readable form, and during 1975 and 1976 these files were merged into a single one by a project at the Universitywide Library Automation Program (ULAP), using programs developed by the UC Berkeley Systems Office and ULAP staff. In April of 1976, this effort resulted in publication of the largest Union List of Serials ever created, some 66,000 pages published on 275 microfiche. Over 244,000 records are included in this file. Currently work is under way to develop a system that will allow the file to be updated, both with new records and corrections to existing ones. Through participation in a national project financed in part by private grants--the CONSER, or Conversion of Serials program--the University

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also is able to have its serial records edited and checked against the authority files at the Library of Congress. The result of these two programs will be a consistent and authoritative, continuously updated file of serial information which can be used by library staff for processing serial titles and consulted by the libraries' users.

In the experience of some libraries, automation can also improve the efficiency of several time-consuming and costly clerical procedures involved in the handling of individual serial issues. Work on a serials-handling system for the University at large has been deferred, however, because it appears that this capability may be available from other sources. The Ohio College Library Center has planned for several years to make such a service available to OCLC participants, and some institutions are already using a pilot version of the service. If the University decides to use OCLC for cataloging, it will naturally give serious consideration to using the serials-handling service as well. The Research Libraries Group (Harvard, Yale, Columbia, and the New York Public Library) has also expressed interest in developing a serials-handling system in cooperation with the University, as has BALLOTS. If none of these alternatives appears feasible, a final possibility to be explored is the re-design and re-programming of the system developed by the UCLA Biomedical Library and used there successfully for several years.

Acquisition Procedures. Automation of acquisition procedures on a systemwide basis has also been deferred, for similar reasons. If the University decides to use BALLOTS for cataloging, it should also be possible to use the acquisition programs already developed as a part of that system. OCLC has also been developing programs to handle acquisition routines, which might be used if OCLC is chosen for cataloging (one study of OCLC found that 76 percent of those libraries surveyed already use the system for pre-order searching, even though such information as whether the book is in print or not does not appear in the record). If neither of these alternatives provides a feasible system, a third possibility to be explored is the further development of a system designed by the UC Irvine library and already used for accounting purposes at UCLA and UC Santa Barbara.

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IMPLEMENTATION

UNIVERSITY OF CALIFORNIA, SAN DIEGO
June 1976

June 28, 1976

To: Catalog Staff

Subject: Reorganization in the Catalog Department

The need for reorganizing the Catalog Department is based on the impending implementation of OCLC and the recognized need to arrange cataloging units into a more logical and manageable workflow.

Based on these assumptions, the following teams were organized:

AUTHORITY/DISCREPANCY TEAM

Responsible for reviewing all new authority work; typing and filing authority cards and references; resolving retrospective discrepancies and initiating any corrections; distributing current discrepancies and reviewing corrections. (Membership on this team is the same as the CONTRIBUTED CATALOGING TEAM. Members work half-time on each.)

CARD PRODUCTION TEAM

Responsible for in-house production of catalog cards for non-OCLC materials; filing catalog cards (both in-house and OCLC) into the author/title catalog, checking for discrepancies in forms of entry; inputting original cataloging at OCLC terminals; proofreading material input at terminals.

CATALOG MAINTENANCE TEAM

Responsible for processing added copies, added volumes, replacement copies, transfers between branch libraries, and withdrawals; making corrections to catalog cards, including call number changes and branch library corrections.

CONTRIBUTED CATALOGING TEAM

Responsible for cataloging using LC cataloging input by a contributing library, or original cataloging input by a contributing library, with special attention paid to forms of entry, classification, and subject headings to ensure conformity to LC and local usage. Establishing corporate bodies and personal names requiring references; inputting cataloging into terminals. (Membership on this team is the same as the AUTHORITY/DISCREPANCY TEAM. Members work half-time on each.)

COPY SEARCH TEAM

Responsible for searching and producing copy for non-OCLC monographic material and for monographic material lacking an OCLC record.

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PRE-ORDER SEARCH TEAM

Responsible for monographic and serial requests from CUL, Cluster and S&E Libraries. Each request is checked against appropriate files to determine if really needed, and its possible relationship to any present holdings. Location of LC or NUC copy is identified. Availability and price are established. Also responsible for processing approval plans, blanket orders and replacements.

MARC CATALOGING TEAM

Responsible for on-line cataloging of monographs with LC MARC copy, altering copy when necessary to conform to book in hand or UCSD procedures; verifying names and establishing cross references for material cataloged; filing into shelflist.

ORIGINAL CATALOGING TEAM

Responsible for cataloging monographs for which LC or contributed copy is not available. Responsible for descriptive cataloging, establishing main entries, added entries, subject headings, and assign LC classification numbers.

SERIALS TEAM

Responsible for cataloging of all serials for CUL, Cluster and S&E, for maintaining the computerized serial record, and for establishing new series added entries, series not used and agency added entries.

SUBJECT TEAM

Responsible for all subject authority work for CUL, S&E and Cluster, including the typing and filing of all guide cards, references and biography cards. The section handles all subject discrepancies and is responsible for all filing into the subject catalog at the Central University Library.

Edith Scott
Head,
Catalog Department

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SUMMARY OF CATALOG DEPARTMENT
PROGRESS IN IMPLEMENTING OCLC

Background: Recognizing the importance of a smooth transition from the manual to an automated system, the Catalog Department has implemented OCLC in logical phases from simple to more complex cataloging and technical operations, thus minimizing the dislocations and confusion that would result from a wholesale conversion, and maximizing the effectiveness of the learning process for the staff. In addition, an initial two month concentration on cataloging using only LC MARC records enabled production rates to recoup some of the losses that occurred during the planning, training and initial implementation stages.

MONOGRAPHIC CATALOGING TEAMS

I. MARC Team

Current status:
Cataloging on line using exact LC MARC records.

Problem Areas:
50-60% LC MARC hit rate causes only 50-60% of the books handled to be cataloged.
Catalogers are anxious to move on to more difficult materials

Interim solution:
Pre-sorting of categories of books having low hit rates will eliminate un-necessary work by catalogers.

Constraints to long-term solutions:
OCLC's deferred MARC records will continue to contribute to low hit rates.
Recycling periods may be too short to raise hit rates on recycled materials to acceptable levels for inclusion into the regular MARC workflow. These books may have to be handled differently than regular potential-MARC.

Future plans:
Use statistics gathered by Pre-order Search and MARC pre-sorters to develop new parameters for potential MARC that will lead to higher hit rates, more titles cataloged, higher cataloger morale and elimination of the need to pre-sort materials.
Develop workflow for using variant LC MARC records. Train catalogers in creating new records and in editing contributed exact match records to conform to LC MARC precedent.
Identify types of contributed records which can be treated as LC MARC. This will raise hit rates and cataloger morale.
Refine MARC workflow to reach maximum efficiency. Study amount of pre-cataloging and authority checking done by catalogers.

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II. Contributed Team

Current status:

The team has progressed through the LC MARC phase to become familiar with the OCLC system. It is now cataloging on line using exact contributed records and comparing them to LC records.

Problem areas:

None identified as yet.

Purpose of comparison study:

To identify categories of records which can be treated as LC MARC and those that will have to be scrutinized more carefully for significant cataloging variations from LC.

Methodology of comparison study:

Records are divided into three types:

1. Those which purport to reflect LC cataloging
2. Those which appear to reflect LC, or which have been input by LC libraries
3. Those which do not appear to reflect LC cataloging, or which have been input by Dewey libraries.

Focus of the study at this time is on category 1, since it has the most likelihood of producing quick results. Records are compared with LC copy to determine variations.

Future plans:

Move some categories of contributed records to the MARC team.

Begin to use and study variant contributed records. Train catalogers in creating new records.

Determine results of the study as soon as possible so that it can be eliminated (Estimate two more weeks, at most, required for category 1)

III. Original Team

Current status:

Same as contributed.

Problem areas:

Staff on this team is limited, inhibiting the prospects for using and studying contributed records with no LC precedent as well as the production of original cataloging.

Future plans:

Same as contributed with the following additions:

1. Begin to study contributed records having no LC precedent
2. Begin to input original cataloging.

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OTHER TEAMS

I. Pre-Order Search Team

Current status:
Inclusion of OCLC in the regular searching of requests.
Temporary searching on OCLC for approval books.

Problem areas:
Short staffing

Future plans:
Elimination of OCLC searching of approval books (Anticipated to be within two weeks)

II. Copy Search Team

Current status:
Manual searching of non-OCLC materials. Manual searching for LC copy to be used by Contributed and Original Catalogers. OCLC searching of non-potential MARC books. Printing of contributed OCLC copy. Pre-sorting of books for MARC Team.

Problem areas:
A higher than predicted production rate for the Contributed Cataloging Team has caused a more rapid than anticipated reduction in the supply of previously searched books. Without additional staff, the Copy Search Team may begin to fall behind in this area.

Future plans:
Re-definition of parameters for potential-MARC will eliminate pre-sorting.
If contributed cataloging continues its high rate of production, staffing needs of Copy Search may have to be studied.

III. Card Production Team

Current status:
Manual in-house production and filing of cards for Non-OCLC materials.
Filing of OCLC cards.

Problem areas:
High cataloging production rates contribute to a heavy workload for the section.
Irregularities of the mail cause uneven workload and workflow.

Future plans:
Consider the use of personnel from other teams to file in Union Catalog.
Attempt to even out workflow for the team, in spite of the mail.
Begin to input new records created by the Contributed and Original Teams.

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IV. Catalog Maintenance Team

Current status:

Manual operations include added volumes, added copies, replacements, cataloging of open entries, and some corrections.

OCLC operations include corrections to both OCLC and in-house produced cards.

Problem areas:

Heavy workload in open entries and added-edition replacements.

Future plans:

Consider moving open entries and added-edition replacements to cataloging teams.

Promote closer cooperation between Catalog Maintenance and Card Production in filing in union catalog.

V. Subject Team

Current status:

Manual operations include filing in CUL subject catalog; subject verification and authority work for CUL, S & E and Cluster subject catalogs, and some manual corrections to subject cards.

OCLC operations include on-line corrections to both OCLC and in-house produced cards.

Problem areas:

Heavy filing and verification workload caused by high cataloging rates and previous backlog.

New section still requires extensive training in subject verification work.

Many recent LC Subject Heading changes and revisions have caused heavy correction workloads.

Future plans:

Continued training of personnel in verification.

IV. Serials Team

Current status:

Serial cataloging and series establishing continue to be done manually. OCLC used occasionally for searching.

Problem areas:

High cataloging production for monographic catalogers creates heavy workload of series to be established.

Serials acquisition and title change rates continue to exceed cataloging rates due to short staffing.

OCLC system has poor quality serial records.

Future plans:

Conversion to on-line cataloging of serials when OCLC serial card production capabilities are up.

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Duke University
Durham
North Carolina 27706

William R. Perkins Library
Technical Services

December 1, 1977

MEMORANDUM

TO: Connie Dunlap

FROM: Bill Gosling WG

SUBJECT: Calendar of projected SOLINET developments within Perkins Library

Funding has been approved for joining SOLINET. If the SOLINET Board acts favorably, the following schedule of events becomes possible, subject to change with the availability of SOLINET staff to do training and Duke University Service staff to install equipment and telecommunication lines.

December 1, 1977	Duke Endowment Board approved funding for Duke University Library to join cataloging network
December 9, 1977	Application for membership in SOLINET mailed to Charles Stevens
January 18-19, 1978	SOLINET Board meets to consider and approve application
January 20, 1978 (or shortly thereafter)	Word received at Duke of favorable action by SOLINET Board
January 23, 1978	Place purchase order with SOLINET for OCLC terminals (this will be forwarded to OCLC for filling through normal channels)
February 6, 1978	Begin 18 week schedule 1. Development of Profile for Perkins and Law libraries including Serials 2. Training of staff using manuals, printed guides and recorded instructions (SOLINET will develop and supply us with the breakdown for this schedule when appropriate)
Early fall 1978	Installation of terminals (best location, an inside room) Begin on-site training supplied by SOLINET De-bugging of profile and related programs As soon as budget approved, place purchase order for remaining terminals
January 1979	System operational on a regular basis for Monographs and Serials, Perkins System and Law Library

DUKE

DECISION NOTES FOR SOLINET/OCLC

IMPLEMENTATION

I. TECHNICAL SERVICES PHYSICAL ARRANGEMENT

A. Total arrangement (ASTF)
1. More space needed
2. Office space needed
3. Acquisitions, bibliography, serials, catalog

B. Cataloging Department (MERGER COMM. + ASTF + PROC. TF + ORG. TF + CDTF)
1. Location of terminals plus printers
2. Organization of staff for work-flow and by section (work level)
3. Unified shelf list ? and location
4. Marking and repair location
5. Terminal room - blue-print
6. Electrical connection (constraints)
7. Wiring, humidity, temperature, lighting
8. Special tables
9. Extra rolling ? chairs
10. Book trucks

C. Serials Department
1. Serials acquisition here ? (PROC. TF)
2. Serials' terminal (ASTF)
3. Location - access
4. Staff arrangement (ASTF)

D. Acquisitions
1. Bibliography - Pre catalog (MERGER)
2. Pre-order and pre-cataloging searching

II. TECHNICAL SERVICES WORK ORGANIZATION

A. Staffing for terminal searching, revision, and in-put - Catalog Department
1. Pre-order searching
2. Pre-cataloging searching
3. Copy cataloging
4. Re-searching (timed intervals + by prof for similar copy + verification)
5. In-put of original records
6. Reclassification ?

B. Other department/library use
1. Serials' access
2. Schedules
3. Law Library use
4. ILL + reference use ?

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C. "On-line" policies
   1. Searching and "acceptance" policies
   2. Authority checking + workflow
   3. Shelf listing - if Dewey (batched)
      a. Prof., L.A.'s, searchers

D. Cataloging policies
   1. AACR II - total acceptance ? adjust OCLC ?
   2. ISBD-S - total acceptance? adjust OCLC ?
   3. Microforms - Rare Books - Manuscripts
   4. MARC input workforms

E. Card catalogs
   1. Catalog maintenance staff
   2. Training of staff for conflict of entries
   3. Revision of OCLC cards
   4. Perkins filing rules
   5. Branch filing rules
   6. Shelf list organization - Perkins (MERGER)
   7. Branch shelf lists

F. Depository card file
   1. Cancel all
   2. Cancel all MARC
   3. Cancel all MARC + (CJK already cancelled)

G. Authority files (MERGER)
   1. Use, organization and maintenance
   2. Staff responsibility

H. Cataloging of non-Roman
   1. Transliterated - on-line ?
   2. Card typing
   3. Card reproduction (effect on photocopy) - cost-effective machines ?

III. LIBRARY CLASSIFICATION SCHEME

JAN '78 ↓ plan

1. Library of Congress

   1. Total acceptance ?
   2. Z's or class. no. ?
   3. PZ's or PR, PS etc. ?

A. APPLICATION
   1. All Perkins system
   2. Branches ?

B. TIME
   1. Begin <u>all</u> (on-line + original) LC classifying on _____, 1978 ?
   2. Begin on-line LC classification only on _____, 1978, original on _____, 1978/9.

or

1. Dewey 18, 19

   1. Total acceptance
   2. On-line DLC and/or contributed copy
   3. NUC/depository LC

A. ORDER NEW EDITIONS ON-LINE
   1. Acceptance by all branches if no modifications
   2. Shelf listing process
      a. Staff
      b. Print copy on-line
   3. Check Dewey 18, 19, etc. on-line
   4. Work-flow

053

III. LIBRARY CLASSIFICATION SCHEME (cont.)

1. Library of Congress or

C. ORGANIZATION
   1. Professionals by LC subject area? Language?
   2. Copy catalogers - general? by subject? Language?

JAN '78 ↓ plan

D. TRAINING
   1. Order LC schedules
   2. Survey of staff familiarity with LC
   3. Program:
      a. In-house? Workshop/classes?
      b. Participants, professional and support staff?
      c. Training the trainer - Principal Cataloger
      d. Extent to LA's, Copy Catalogers, Searchers, *Reference staff/Circulation, Branches
   4. Time:
      a. January 1978?
      b. Summer 1978
      c. Length of program

FALL '78

E. FACULTY AND STUDENTS
   1. Announcement
   2. Brochures
   3. Orientation
   4. Signs
   5. Training of staff

FALL '78 ↓ plan

F. SHELVING
   1. Arrangement (ASTF)
   2. Long-range plan
   3. By floor

SPRING '78

   4. By library stack section e.g. Dewey in 1929 + 48 stacks?
   5. Compact Dewey?
   6. Branch shelf arrangements and shifts

G. CONVERSION-RECLASSIFICATION
   1. Perkins Reference?
   2. All Reference collections?
   3. Currently received serials
      a. If not reclassed:
         1. Add in Dewey?
         2. New issue in LC?
         3. Card catalog references
         4. Fiche references

1. Dewey 18, 19

B. ORGANIZATION
   1. Organization of professionals by subject Dewey class
   2. General and priorities established?
   3. Language specialty?
   4. LA's and copy catalogers - subject or general or language

C. TRAINING
   1. Dewey 19
      a. Usage
      b. Impact?
      c. Duke's Dewey
   2. Reclassify
   3. Ignore conflicts

D. SHELVING
   1. Stack shifts according to Dewey subject expansion

IV. SERIALS DEPARTMENT CONSIDERATIONS

A. Physical arrangement
   1. Terminal in terminal room
   2. Terminal separate
   3. Total rearrangement of staff
   4. Office space
   5. Serials acquisitions in serials?

B. Generation of cataloging data
   1. Cards continued?
   2. Perkins - Branches (RBR - Ms.)
   3. If cards continued
      a. Shelf list
      b. Serials catalog (holdings card needed - will OCLC produce)
      c. Systems (card or tape)
      d. "To date" on serials?
   4. Fiche only?
      a. Via Duke/SOLINET tape
         1. How in-put
      b. Are serials tapes available separate from monograph tape?

C. Training
   1. Professionals - catalogers + JC + JL Workshops - SOLINET/NC
   2. Staff and work organization
   3. 'Acceptance' policies
   4. ISBD-S
   5. Dewey/LC

D. Serials Sub-system on OCLC
   1. Terminal schedules
   2. Pre-order search?

E. Long-range plan for computerized check in
   1. OCLC?
   2. Local?
      a. Check-in on line
      b. Binding information
      c. Ordering information
      d. Payment information
      e. Claiming information

F. Accessibility of serials check-in record
   1. Physical arrangement for Public Service use
   2. Catalog/Fiche Assistance Desk in Reference

G. Current Periodicals staffing

V. DOCUMENTS CATALOGING

A. Catalog U. S. Documents?
   1. If so - see Mary Dawson's 12-12-77 memo

B. Catalog:
   1. Select documents
   2. All U. S. documents

B. Catalog: (cont.)
   3. On-line priorities
   4. Original priorities

C. Present backlog
   1. Staff needed
   2. Priorities

D. Classify SuDocs?
   1. Classify SuDocs and Dewey/LC

E. Shelflists
   1. Documents only
   2. Documents vs Perkins TS
   3. Perkins TS only

F. Card catalog representation of Documents
   1. Perkins only ?
   2. Documents and Perkins?
   3. Branch (when placed there) Perkins?
   4. Branch (when placed there) Perkins and Documents?
   5. What will Documents catalog contain

G. State Documents
   1. Continue, expand, eliminate, limit?
   2. Cataloging - full?

H. U.N. Documents
   1. Begin cataloging?
   2. Limit collection?
   3. Classification? JX?

I. International Agency Publications?
   1. Location
   2. Cataloging

J. Maps
   1. Union catalog of Maps in Documents
   2. Full cataloging

K. Rand Collection:
   1. Full cataloging?
   2. Location?

VI. COROLLARY DECISIONS:

A. Will Reference use data base?
   1. How check for in-process/received/cataloged
   2. Card delay (mail) - book on shelf?
   3. Schedule/use of terminals
   4. Orientation

VI. COROLLARY DECISIONS: (cont.)

B. Will ILL use terminals for verifying - borrowing?
   1. Schedule
   2. Access
   3. Orientation

C. Acquisition/Bibliography use?
   1. Pre-order; verify
   2. Unify pre-order and pre-catalog?
   3. Schedule/terminal

D. Input of Rare Book material?
   1. Searched - copy catalog?
   2. Original?

E. Manuscripts cataloging
   1. Input?

F. A-V cataloging?
   1. Format
   2. Full catalog?
   3. Location
   4. Classification/format/accession

G. Pamphlets
   1. Locations?
   2. Full cataloging?
   3. Input?

H. Microforms
   1. How catalog?
   2. Sets/monograph copies/serials copies
   3. Classify sets/monograph copies/serials copies - accession
   4. Storage - Fiche/Film
   5. Shelf list N+M + TS/N+M or TS

I. Collection Definition of:
   1. Undergraduate Library
      a. Permanent reserve? plus collection
      b. Temporary reserve? plus collection
      c. Cards for catalog
      d. "UGL" - location symbol?
      e. Separate shelf list - TS shelf list
   2. East Campus Library?
      a. Cards for catalog
      b. "ECL"
      c. Separate shelf list in ECL? TS shelf list
   3. Science Libraries
      a. Shelf list in branches
      b. Full set of cards branch + Perkins
      c. Full set of cards Perkins and second branch

VI. COROLLARY DECISIONS: (cont.)

I. Collection Definitions of:
   4. Reference Collection
      a. Reference catalog in Perkins - what inc.?
      b. Shelf list TS? Separate?
      c. Shelf list for Documents Reference?
      d. Shelf list for branches?

J. Catalog Information Desk
   1. Service fiche? Catalog? Serials check-in
   2. Staff and hours?

K. Authority files - card (Profile?) ROM II
   1. Maintenance
      a. Serials access
      b. Monographic access

FORMAL TRAINING ACTIVITIES

1. Initial introduction to BALLOTS for the cataloging staff took place last April when BALLOTS personnel presented a one day workshop--overview and explanation of the system--to the entire library staff.

2. A week or two after the BALLOTS presentation at BYU, three members of the cataloging staff attended a two day hands-on workshop held in Salt Lake City. Those attending had the opportunity to actually operate the terminals.

3. Cataloging staff was kept abreast of developments in the library administrations discussions involving OCLC and BALLOTS and the possibility of our joining one or the other.

4. When the decision was made to join BALLOTS, preliminary training of the cataloging staff was undertaken. Relevant reading materials on the BALLOTS organization were distributed and meetings held where these were discussed, along with probable and possible changes that would take place in the Catalog Department.

5. A selected group of clerical employees were more heavily involved in the classification and cataloging processes of the department, on the manual level, to acquaint them more fully with basic principals of classification and cataloging. This, we felt, would make the transition to operating terminals easier.

6. Several meetings were held with the library's systems analyst, where he explained to the entire department what they could expect in our change over to an automated system. Using visual aids, he explained in general terms how we would order cards from the existing data base of BALLOTS, and also how we would create cards. He introduced us to some of the general terminology we would meet. This made our initial training sessions with BALLOTS personnel much more understandable and helpful.

7. Terminals were installed approximately 2 weeks before we were ready to go with BALLOTS. During that time, we experimented with them, in a demonstration mode, following instructions manuals as best we could.

8. Formal training with two instructors from BALLOTS took place in early January. We felt that our personnel had enough general background to ask intelligent questions and feel more or less at home with the BALLOTS vocabulary. The training sessions were very well handled and we felt fairly secure about beginning operation.

9. Training within our own system has continued since our BALLOTS training period. Those who are a little more proficient with the system and who feel comfortable and at ease (and have demonstrated their ability) are assigned on a one-to-one basis to work with those who are still very insecure. Our big push is to train the para-professionals who will be operating the terminals, but we are also encouraging professionals who are interested to get in and try terminal operation. We are now having training sessions and individual help sessions with professionals on filling out worksheets for terminal operators.

ST. LOUIS, MISSOURI 63130

February 10, 1975

TRAINING COMMENTS

There didn't seem to be any one factor which influenced the training but some people naturally did learn faster than others. Fear of the system may have slowed some people down at first.

Basically I trained everyone in groups of 8-10 people and then the Catalog Dept. OCLC coordinator answered questions individually. It may have been better if the groups would have been smaller. Anyone having problems was helped individually.

People probably did better somewhat on their own - they tended to get nervous if anyone was watching them.

The mechanics of operating the terminal are not that difficult but learning the MARC tagging takes longer.

Confusion resulted because ISED was beginning at the same time as we joined OCLC.

There was a problem of having so much to learn at once. We tried to prepare ahead of time but the system is very difficult to comprehend until you actually start using the terminals.

With a lot of people to train you should have a good training program organized from the beginning or it can easily get out of hand.

You need to find out exactly how much people can grasp at one time and give them that and no more. If you present too much at one time people don't retain all of it. But there is so much to learn you can't go too slowly. We only had our terminal about 1-2 weeks before we started ordering cards. Therefore some people were not really fully prepared at the beginning.

It is important to emphasize the most crucial concepts over and over again.

We really started at a bad time due to Thanksgiving and Christmas. Several people took vacations at this time and it complicated training.

The terminals were down several times when I was training people and I would want to demonstrate something and couldn't.

The poor response time of the terminals also discouraged people and still does. They couldn't get as much done as they wanted to and this led to feelings of frustration because the new system was slower than the old.

The training time figures are probably less than the actual time spent. OCLC overshadowed everything else and it was difficult to record every minute you were actually learning about OCLC.

The training in the use of the terminals has completed but the training in the use of the OCLC system is continuing.

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ST. LOUIS HECC/OCLC DEMONSTRATION PROJECT

The Evaluation Report
Training

Washington University Library

by Judy Fox date Feb. 10, 1975

Code no. & Title	Total Hours Spent	Average salary/ hour	Cost	Comments (age, type of library and other experiences and factors that helped or hindered the training process)
Junior Catalogers and Catalog Assistants (7)	124	3.96	490.04	Learned all aspects of OCLC system
Professional Catalogers (4)	98.7	5.46	539.18	Learned all aspects of OCLC system
Card preparation and processing assistants (6)	90.6	3.06	277.24	Learned all aspects of OCLC system but not in as much depth as above 2 categorie
Professionals learning searching only (3)	16.8	5.39	90.55	Learned searching only
Nonprofessionals learning searching only (8)	103.8	3.05	316.59	Learned searching only
Catalog Department Supervision and training (2)	254.9	5.91	1504.35	Chief of Department and OCLC coordinator (1 professional and 1 nonprofessional) (Salary average adjusted to reflect time spent by each)
Total	594.9		3217.95	

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EVALUATION

Summary of impact of OCLC system on the UCSD Catalog Department

As a result of the introduction of OCLC into the cataloging operations of the Central University Library at UCSD, several major organizational changes were made within the Catalog Department. One large copy cataloging unit was divided into two smaller teams, each specializing in cataloging activities using a particular category of OCLC record. The MARC Team handles LC MARC records only and catalogs directly on-line with a minimum of pre-cataloging checking. The Contributed Team members receive printed OCLC records accompanied by LC copy which they use as a basis for editing contributed records. This division of labor has meant that those new acquisitions with LC MARC records on line move quickly through the cataloging operations and on to the shelves; those without LC MARC records on line are "recycled" for six months to await LC MARC records. Since LC records are considered the "standard" records and are accepted with as few changes as possible, the MARC Team (7.5 FTE) catalogs about two thirds of the books processed through the department. The Contributed Team (6.0 FTE cataloging), whose responsibilities also include authority file maintenance and discrepancy checking, catalog most of the remaining one third. The freezing of two vacant academic positions to finance part of OCLC costs has meant that original cataloging contributes very little to the Department's overall production figures. Other areas reorganized as a result of the change to OCLC were the Card Production, Catalog Maintenance and Subject Teams.

OCLC has had a positive effect on cataloging production; during the first six months of OCLC operations, copy cataloging production has gradually increased. Original cataloging, however, has sharply declined because of the shortage of librarians. The rise in copy cataloging production is attributable not only to the OCLC system itself but also to both increased efficiency in the flow of work and to increased effectiveness of the organizational structure. With additional experience in using the OCLC system and constant re-evaluation of existing procedures, production rates may be expected to continue to rise over the next few months.

UNIVERSITY OF ARIZONA
June 1976, 1977

THE OCLC EXPERIENCE
by Nancy Douglas

In the May 1976 issue of American Libraries, there is an article by Joe A. Hewitt (Associate University Librarian for Technical Services, University of North Carolina) entitled "The impact of OCLC". It seemed to me that anybody who read it would be wondering how we compared with the libraries he studied, so I've tried to analyze our experience below. Though I've included parts of Hewitt's article, I do recommend that you read the original if you want the full picture.

Sample, Time, Size

Hewitt's sample was the 47 charter member libraries, a geographically coherent group with established operational experience. The data was gathered between May and September, 1974, making it the most recent study of its kind. It was expected that the utilization and effects of the network would vary according to the size of library, with "size" based on the total acquisitions budget for 1973. Sizes ranged from Type A, with budgets of $500,000 or more, to Type E, with budgets below $50,000.

The University of Arizona would be considered a Type A library; our data has been gathered from January through May, 1976.

Do OCLC libraries really share?

"Much of the early impetus for the establishment of OCLC was based on the goal of facilitating the sharing of resources among academic libraries in Ohio. The union catalog feature of the system provides a mechanism for facilitating interlibrary loan (ILL), direct use by patrons of other libraries in the network, and the development of cooperative collection development programs. In terms of terminal time required, ILL represents a very minor demand in all libraries, compared to that for pre-order verification and for cataloging."

95 % of member libraries make some use of OCLC in ILL work
59 % search all Roman alphabet requests on the terminal
41 % use the terminal for location finding or bibliographic verification

Libraries which do put limitations on their ILL use of OCLC restrict it by searching only for requests published after a certain date, or searching other tools first, or eliminating "low probability" requests. Libraries using the system for ILL verification had "hit" rates of 75-80 % for small libraries, but the success rate dropped to 60 % or less for the one Type A library that had kept statistics. Slight decreases in time for processing and receipt of monographs were noted by 41 % of the libraries, which was attributed to sending requests to the closer libraries (remember, these are all in Ohio).

Overall, the tendency was to send requests to smaller libraries, followed by a tendency to send to closer libraries. Type A libraries were able to fill a higher number of requests within the state when using OCLC.

At the U of A, we have assigned 2 1/2 hours per week (1/2 hour per day) for ILL use. Almost everything is searched on OCLC except requests for serials. About 50 % of our requests are found on OCLC. When sending out requests from our patrons, we generally try for smaller libraries, but also tend to use ones in Texas and New Mexico. ASU or NAU would also be first-choice libraries, but we haven't found many of their records on yet - not much higher than were requested pre-OCLC. If the choice were between the University of Texas and a small Ohio library, we would usually try the small Ohio library first. Usually ILL requests are received within 3-4 weeks; with OCLC it's more like 2-3 weeks.

ACQUISITIONS

Cooperative acquisitions programs

"Only 7 of the 47 charter members were actively engaged in cooperative acquisitions

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programs with others in the network." Five libraries checked certain categories (price and subject) prior to selection, and some libraries checked for local ownership when faculty requests seemed to be peripheral to the collections.

At the U of A, we are not using OCLC for this at all, though there is some informal notifying of ASU when we purchase something costing over several thousand dollars, or something which is less costly but really wouldn't need duplication within the state. Generally we purchase whatever the faculty requests. On occasion we might refer them to the public libraries, but we don't check OCLC to see if the public library has the work.

Use in acquisitions work

OCLC was expected to affect Acquisitions work primarily as a resource for the verification of book orders before they're sent to vendors or publishers. 76 % of the libraries make some use of the system for pre-order searching; 54 % search for all monographs, or all published since 1968. The results in full-use libraries are very favorable. "The majority of full-use libraries automatically search the data base before searching the card catalog or order file. The average pre-order find rate for the full-use libraries is 71 % with a range of 50-90 % ." Eighty-three percent of the full-use acquisitions departments indicated that the time delay in pre-order searching was reduced by use of the terminals; estimated time reductions ranged from one to four weeks on processing new orders.

We have 10 hours per week (2 hours per day) scheduled for Acquisitions searching at the University of Arizona. Since a major reason our Acquisitions Department searches OCLC is for bibliographic verification prior to ordering, things are not searched if they already have adequate verification, such as items from dealer catalogs or reprints which have been announced but not yet published. Some very old materials also are not searched on OCLC, regardless of predicted success in finding them.

Our Acquisitions Department is finding a hit rate of up to 90 % on recent materials, 70-90 % on science materials, 70-80 % on Latin American and Spanish materials, and about 40 % on German - other than Spanish, foreign language searches are generally less successful than English searches. It was agreed that the OCLC searching had cut our verification time considerably; the "one-to-four-weeks less" figure seemed right. On orders received with very poor bibliographic information, the OCLC search may have cut years from the verification process. The presence of series information also has saved money in preventing the ordering of duplicates. One problem mentioned was that OCLC is slow in getting the MARC tapes onto the system, so it is sometimes impossible to verify extremely current items.

CATALOGING

Utilization of OCLC in cataloging

"Cataloging, of course, is the principal function of OCLC as it presently exists, and the emphasis in all libraries is on the use of the system as a cataloging support device. All except five libraries search all Roman alphabet titles in the data base for cataloging data, regardless of the publication date or language of the book. The mean find rate for the first search with books in hand was determined to be 74 % , ranging from 67 % for Type A libraries to 80 % for Type E libraries." As regards the final proportion of titles cataloged with records on the data base as compared to original cataloging and cataloging with other copy "... it is safe to say that original cataloging has been all but eliminated in Type D and E libraries, and apparently averages well below 20 % in the other types."

At the University of Arizona we search all Roman language titles on OCLC. We are a Type A library and our find rate for the first search with books in hand has been 67 % (exactly as in the survey!) The proportion of titles cataloged with records on the data base(as determined on the first search) is 67 %, with the remaining 33 % split into groups to hold for a re-search, or to do an NUC search, or to send on to an original cataloger. The proportion of things which are finally done by a cataloger as original cataloging is about 20 % or less; the production of original records has lately been running about 12 % of our total production.

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Inputting tagged records

Estimates on the rate for inputting tagged records at the terminal were obtained from 40 libraries and the estimated rate is 8.7 records per hour, excluding time for revision. Several libraries reported revision rates of about 4 minutes per title, indicating a rate for the full procedure of six titles per hour.

At the University of Arizona, we have no consistent records on inputting rate; however, in a recent four-hour period, one typist input 24 records, giving a rate of six per hour.

Catalog integration

Series authority checking is generally done prior to the ordering of cards, either as part of the pre-order searching or the cataloging procedure; subject authority work is most frequently done after cataloging, usually in conjunction with filing; and there are no clear patterns with respect to the handling of names and corporate bodies. 85% reported that use of the system had not acted to make the problems of catalog integration more severe. 49% of the libraries hold books in the cataloging department until cards are received; 50% send books on for final processing and shelving directly after cataloging at the terminal.

At the University of Arizona the series authority work is done as part of the cataloging procedure prior to the production of cards; subject authority work is done in conjunction with filing; names and corporate bodies as main entries are checked before producing cards as are some added entries if there is a strong chance that an authority card and cross references would be needed, otherwise they are checked in filing. We send books on for processing directly after cataloging them and do not hold for cards.

Does OCLC speed cataloging?

91% of the libraries reported that the time required to catalog books and produce sets of catalog cards had been reduced by on-line cataloging; the mean estimated reduction was 2.8 months. Those who did not report improvement in this area were in all cases small libraries in which books were already being cataloged at unusual speed prior to OCLC and performance with respect to turnaround time was essentially unimprovable; the quick cataloging achieved through their earlier methods resulted from a strong emphasis on processing, sometimes at the expense of other library functions. More charter members identified improved speed of cataloging as their primary objective for supporting the development of the center than they did reductions in cataloging costs. It is a benefit recognized as worth the price of participation even in libraries with increased operating costs under OCLC.

For the University of Arizona, 94% of the books have been cataloged or have reached a cataloger by the third month after receipt. Prior to OCLC, it took about six months to reach the 85% level, and the remainder would wait in the Pre-Catalog section for almost a year for the final search. OCLC has reduced the turnaround time for most books by at least three months.

Does OCLC require reorganization?

After three years only 9 libraries had reorganized the departmental structure of technical services.

At the University of Arizona, though there was some shifting of functions, the departmental structures have remained essentially the same.

How do staff react to OCLC?

The survey showed staff to be afraid of the whole concept of switching to on-line cataloging until they started working with the system. It was felt to increase the challenge in clerical jobs, according to 74% of those Hewitt interviewed.

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Workflow and personnel utilization

In planning the survey, it was assumed that the size of library would be the primary factor in determining workflows, personnel utilization, and methods of interface, but it became evident that the critical factor is the classification system used.

The study identified three predominant patterns of workflow and personnel utilization in libraries using LC classification - arbitrarily termed restrictive, semi-restrictive, and non-restrictive - based on an analysis of the decisions allowed terminal operators. The restrictive pattern, characterized by the use of clerical personnel, allows the primary operator to catalog only with exact match MARC (LC machine-readable cataloging) copy, resulting in a fast cataloging rate but a large volume of materials routed through exception routines to be handled by higher level staff. The semi-restrictive pattern, characterized by the use of paraprofessional staff, allows the operator to adapt records and to accept member input copy under strictly defined conditions, and results in an intermediate work rate and a moderate level of exceptions. The non-restrictive pattern, characterized by use of professional and top-level paraprofessional staff, allows the operator to accept and adapt any type of copy, and results in the slowest work rate and fewest number of exceptions.

Eight LC classification libraries use restrictive patterns, 11 semi-restrictive, and 11 non-restrictive. Further study would be necessary to determine which pattern, if any, is most cost-effective. It was obvious that in most cases the adoption of these patterns was not a conscious choice, but evolved from previous practices of cataloging with LC copy. There was a strong tendency for large libraries to prefer the semi-restrictive pattern and small ones the non-restrictive, with the restrictive pattern fairly well scattered throughout the types.

One mix of procedures appeared to be particularly successful; a restrictive pattern with clerical personnel was used to catalog books with exact match MARC records pre-identified in the acquisitions search, a procedure reported to yield a work rate of between 20 and 25 titles per hour under good response-time conditions. A semi-restrictive or non-restrictive procedure, using a higher level of personnel, would then be used to handle incoming books with no pre-identified copy, or with adaptable MARC and member input copy.

The University of Arizona uses a part of all these systems, but basically we would be described as using a restrictive pattern. Currently, members of the Typing Section do the first search with the book in hand, but they don't produce cards. The OCLC Catalogers (Pre-Catalog Section plus the LC Catalogers) catalog books with exact MARC copy and also can modify member input copy when they have an LC card in hand. Librarians catalog titles on OCLC for which the only OCLC record is adaptable MARC or member-input copy and there is no LC card available. This procedure seems rather like that described by Hewitt as "particularly successful."

Our choice of pattern was a conscious choice, but has gone through some evolution. Originally the OCLC catalogers did all of the searching, but they've worked at a better rate since we've changed to having the first search done by others and OCLC catalogers having only to handle records they can actually produce.

On-Line cataloging speed

Thirty-five libraries were able to provide either hard data or reasonably firm estimates on production rates for cataloging with records in the data base. The mean estimated rate for all 35 libraries is 14.3 titles per hour; the rate for the 25 libraries using the LC classification is 14.9, the rate for five libraries using restrictive procedures is 17.4, for the ten semi-restrictive, 14.9, and the 10 using non-restrictive is 12.1. All rates are lower for Dewey classification libraries. The estimates were based for the most part on early experience on OCLC when response time was superior to what it has been in some recent periods.

At the University of Arizona it's hard to compare us on these statistics. We do know our OCLC catalogers produce about 9 titles per hour. No statistics have been kept here on things having records on the system which have to be produced by a librarian, but there seems to be a feeling among the catalogers that the rate for them ranges from 12 to 20 records per hour on the materials they handle.

As I have not surveyed the full staff at the University of Arizona, I really can't say how they feel toward the system. Generally, I have the impression that they no longer fear it as they once did; the rate of turnover has been quite low lately, which perhaps indicates more interest in the job. The OCLC searching work done by Library Clerk I and II staff also makes them strong candidates for OCLC Cataloger jobs (LC III) that open up.

Do libraries meet their objectives for OCLC use?

"OCLC was judged to have met, to the satisfaction of library directors, the principal goals of 80% of the libraries in which objectives were stated. No criticism even remotely implied fundamental flaws in the concept and design of the system. A small minority said it would favor a simpler, cheaper alternative."

The University of Arizona has been fully operational on OCLC for less than six months, so no evaluation overall is possible. However, it seems we will be very close to equalling our number of books cataloged last year (even considering that little cataloging was possible during October and November this year), so in this area at least it seems to be fulfilling its promise. The increased speed in Acquisitions pre-order verification and in ILL are extra benefits.

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OCLC AT THE UNIVERSITY OF ARIZONA

After reading Joe Hewitt's study of OCLC implementation in the 47 charter Ohio libraries,[1] we were interested at the University of Arizona in seeing how our library would compare to those he studied. All of the libraries in Hewitt's sample used OCLC primarily as a catalog support device, though most also used it, as we do, in acquisitions pre-order verification and interlibrary loan. In order to see how OCLC would affect our production in cataloging, we have kept statistics from the beginning of our OCLC implementation, covering especially January to May 1976 and July to December 1976.

The University of Arizona's catalog department OCLC search team usually consists of members of the typing section and a few other career staff members or librarians who want to develop OCLC searching skill. In Hewitt's sample, the mean find rate for the first search with books in hand was 74%, though it ranged from 67% in libraries with budgets over $500,000 to 80% for those with budgets below $50,000; rates of original cataloging were well below 20% in all types of libraries. At the University of Arizona we search all Roman language titles on OCLC and our budget ranks us with Hewitt's largest libraries. Our find rate for the first period covered by our statistics was 67% but more recently the rate has increased to 75%. We think this increase may have come from two factors: OCLC has greatly improved the search strategies available for corporate names and conferences, making it possible to find some which were irretrievable before, and also we have developed a time lag before our first OCLC search. In our earliest use of OCLC, books were searched within a few days of their arrival; at present, we have accumulated so much new material that it may be several weeks before a book gets its first search on OCLC. This lag has not changed the portion of LC copy found appreciably, but there seems to be a greater chance of finding copy contributed by another member library.

As a result of this first search, the materials are divided into three groups: "OCLC/DLC" which is LC copy input by LC or a member library; "Contributed copy" which is copy created and input by a member library, and "OCLC" (OCLC zero) which is our designation for materials which have no OCLC copy. OCLC/DLC materials comprise about 45% of the materials on the first search; they remain in the terminal area on book trucks and cards are produced by career staff. Contributed copy books, 30% of the first search, are distributed to the professional subject catalogers for call number and subject heading verification. OCLC zero materials, the remaining 25% of the first search, are further split into groups to await a re-search or for an immediate manual search in the National Union Catalog. Of the OCLC zero material, about 35% was published in the last four years and is held for a third-month re-search. The older materials are searched through NUC. If the NUC search results in LC copy, this is tagged by career staff and input by a typist. If no copy is found, the professional catalogers do original cataloging and tagging on worksheets which are input by typists. About 12% of our OCLC production results from copy input by our typists working from tagged cards or worksheets, at a rate of about six records an hour.

On-line cataloging speed varied in Hewitt's sample in relation to classification scheme used and the manner in which career staff members and librarians were assigned different OCLC functions. In all cases he studied, Dewey libraries di[illegible]-line cataloging more slowly than did LC libraries. In LC libraries th[illegible]te ranged from 14 to 17 records per hour for cataloging from record[illegible] the data base. However, the rates were given for a

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period of time when response time was superior to what it has been in recent periods. The Unviersity of Arizona library uses LC classification and uses career staff in a manner which should result in a rate of about 17 records per hour, according to Hewitt's report. In fact, our average rate has been closer to 10 an hour, though individuals have done up to 19 an hour when response time was good.

When Hewitt explored the question of catalog integration, he found in his sample that series authority checking was generally done prior to the ordering of cards, subject authority work was most frequently done after cataloging, usually in conjunction with filing, and there were no clear patterns with respect to the handling of names and corporate bodies. About half of the libraries held books in the catalog department until cards were received, and half sent books on for final processing and shelving directly after cataloging at the terminal. At the University of Arizona the series authority work is doe as part of the cataloging procedure prior to the production of cards, subject authority work is done in conjunction with filing, and names and corporate bodies as main entries are checked before producing cards, as are some added entries if there is a strong chance that an authority card and cross references would be needed. We send books on for processing directly after cataloging them and do not hold for cards.

A reduction in cataloging time overall was reported by 91% of Hewitt's sample and the mean estimated reduction was 2.8 months. More charter members identified improved speed of cataloging as their primary objective for supporting the development of OCLC than they did reductions in cataloging costs. During our earliest participation in OCLC we were showing the same sort of time reduction; materials were taking about three months less to reach the shelves. By the third month after receipt, 94% of the books had either been cataloged or had reached an original cataloger. Prior to OCLC it took about six months to reach an 85% level. Currently, if the item is on OCLC it should be cataloged during its third month in the library and those which require NUC search will have reached an original cataloger by that time, so about 90% of the material will be cataloged by the fourth month after receipt.

Even so, OCLC hasn't solved all of our cataloging problems at the University of Arizona. Since we rely on OCLC for all Roman language card production, when the system is "down" (not operational for us), things back up on us. Weeks of downtime before we were first operational, a week more when they installed a new computer in Columbus, minimal use during the weeks of moving into our new library building, and an increased rate of acquisitions have all contributed to a larger backlog than we have ever had before. Nevertheless, we expect to catalog about 40% more titles than we did last year--an additional 15,000 or more. If we were not using OCLC our increased rate of acquisitions would simply mean that these 15,000 or more titles would join the backlog.

[1]Hewitt, Joe. "The Impact of OCLC." American Libraries, 7 (1976), 268-275.

by Nancy Douglas, Cataloging Librarian, Univ. of Arizona

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BALLOTS EVALUATION REPORT

BALLOTS COST DATA

Start up cost

Terminal - on loan til Jan. 30, 1977	NC
Terminal	$3,960
Installation	30*
Communication line installation	210*
Catalog profile	120
Training including travel	236
TOTAL	$4,556

* Estimate

BALLOTS OPERATING COSTS[1]
(Rounded to the nearest dollar)

	Jan.	Feb.	March	April
On-line services				
Per title charge	$1,516[2]	$1,131	$1,825	$5,234[3]
Connect time charge	1,743	1,800	2,012	NC
Off-line services				
Cards	458	448	612	1,220
Standing search	10			
Terminal maintenance	70[4]	70	70	70
Communications (TELPAK)[5]	169	163	167	149
Communications (ATSS)	190	163	160	158
TOTAL	$4,156	$3,775	$4,846	$6,831
Number of titles cataloged	1,516	1,131	1,825	2,617
Unit cost of cataloging[6]	$2.74	$3.34	$2.66	$2.61

(1) Also includes bibliographic search and printing of catalog copy performed by the Acquisitions staff using a DECwriter terminal via ATSS.

(2) January connect hour charge includes the cost incurred by the staffs of the Health Sciences Library and Law Library for their training.

(3) Because the average number of titles cataloged per hour exceeded 12, BALLOTS charged $2.00 per title but did not charge for the connect time.

(4) $35/mo/unit is an estimate given by BALLOTS.

(5) The charges for February, March and April are prorated among the Main Library, Health Sciences Library and the Law Library. Figures shown represent the charges to the Main Library only.

(6) The unit costs shown include connect hour charges for activities other than cataloging:

January -			61 hrs. Bib Searching
February -	10 hrs. 40 min.	Demonstration;	55 hrs. Bib Searching
March -	33 min.	Demonstration;	43 hrs. Bib Searching
April -	53 min.	Demonstration;	42 hrs. Bib Searching

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COST OF OBTAINING CATALOG COPY

The cost of obtaining catalog copy is included in the preceding overall operating cost of BALLOTS. If the cost of obtaining catalog copy is to be isolated, the UCD experience indicates the following.

	Jan.	Feb.	March	April
Main Library only				
Connect hours	50.75	43.4	42.75	42.3
Charge @ $12.00	$609.00	$520.80	$513.00	$507.60
Comm. charges ($3.75/hr via ATSS)	190.31	162.75	160.31	158.63
	799.31	683.55	673.21	666.23
Number of titles searched	3,928	3,627	3,575	3,721
Hit rate	57%	57%	52%	56%
Number of copy found	2,238	2,056	1,871	2,091
Cost/title*	.16/.20	.14/.19	.14/.19	.14/.18
Cost/hit*	.27/.36	.25/.33	.27/.36	.24/.32

* The figures left of the slash are computer cost; those to the right represent the total cost which includes the computer and communcations (ATSS) costs.

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...LCIS operating costs, Health Sciences Library

Start up Costs

Non-standard training, 2 hours[1]	$ 68.40
Dec.1975 Decwriter [illegible] (4.5 hours)[2]	27.00
Jun.1977 Decwriter experimentation (1.0 hours)[2]	67.50
Mar.1977 CRT demonstrations and training (.85 hours)[1]	58.20

Operating Costs	Feb. 1977	Mar. 1977	Apr. 1977
Online Services			
Decwriter connect time	$ 59.94[2] 9.36 69.30	$ 42.24	$ 61.40
CRT connect time	-	339.00[3]	397.56[4,5]
Per title charges	-	199.00	337.00
Offline services			
Catalog cards	-	56.72	228.36
Communication charges			
ARSS	10.31	5.85	7.78
Telpac included in Main Library estimates			
Total	$ 79.31	$ 674.31	$ 1024.10
No. of titles cataloged	-	199	337
Unit cost per title cataloged	-	$ 3.35	$ 3.04
No. of card sets requested[6]	-	209	306
Unit cost per card set	-	$ 3.21	$ 2.59

1 Billed to Health Sciences Library
2 These costs billed to the Main Library; estimates are given.
3 $ 452.40, as billed, less demonstration costs (4.5 hrs or $ 59.20) and less the April refund (5.1 hrs or $67.20) equals $ 339.00
4 $ 397.56 as billed
5 Overcharge, to be reconciled
6 Includes added sets made for copies of titles in both the Health Sciences Library and the S.F. Mount Zion Medical Center, Central Library

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I. a. Direct Charges

There are no other direct costs other than those items indicated in the preceding tables. It should be pointed out, however, that if the Zentec terminal could accommodate a print attachment, we would not have to pay the telephone communication cost (ATSS), which has been running in the range of $150 to $190 a month.

b. Indirect Cost

With the exception of the cost in terms of personnel training time, the indirect expenses have been minimal. In this connection, it should be noted that the Acquisition Department reduced its clerical assistant time by .60 FTE during the current fiscal year because the BALLOTS bibliographic search proved exceedingly efficient. On the other hand, the Catalog Department has not had a sufficient experience with the system to analyze BALLOTS effect on its workload.

c. We feel that the pricing structure needs evaluation, particularly the charges on computer connect time.

II. a. Capabilities

The central system was down frequently during February. The totals of down time experienced by the terminals are shown below:

DAV	BS	(CRT)	8 hrs. 11 min.
DA2	BS	(CRT)	2 hrs. 12 min.
UCD	BQ	(Printer)	2 hrs. 40 min.

We are happy to report that since the up-grading of the system was effected in March, down time is no longer a problem.

We had some difficulty in reconciling the connect hours shown on our log sheets and those recorded by the central system and billed by BALLOTS. The problem, as we learned from BALLOTS Center, was that the central computer was unaware when the terminals were locked and kept on clocking the time as if they were functioning. As a consequence there was a discrepancy of 21 hours in February and 6 hours in March. We are glad to report this situation has been corrected.

UCD would be better served if the system were operative from 7 a.m. Monday through Friday. We would also like to have cataloging hours available on Saturdays. (See E. Payne's memo.)

b. Terminal and Communications Facilities

UCD has experienced no hardware problem with the two Zentec terminals. In February when we experienced excessive down time, we were informed that a part of the problem was that UCD modem and UCLA modem were switched inadvertently by a telephone company personnel at the central site.

The inability of the current Zentec terminal to accommodate a printing terminal is a serious drawback for the following reasons:

1. Printing terminal to be used via a voice grade telephone line can go only at the speed of 30 characters/second, while a printer attached to a CRT may go 4 times as fast.

2. Because a printer cannot be used on a TELPAK line, we are using a telephone to reach BALLOTS. The telephone charges are a significant cost factor (see Section I).

3. Revision of original input can be performed away from the terminal, if the data can be printed out by a printer.

c. Reliability

Except during February when there was excessive down time, response time has been excellent, normally under 1 second. Some staff members have occasionally noted "very slow" on log sheets, but we do not know what is meant by it, for we did not time the "slow" responses.

The system goes into a "panic interrupt" under certain conditions. Although not a frequent occurrence it happens often enough that anyone who operates on the terminal regularly has had it happen to her. The HSL searcher stated that after 5 PM the system occasionally notifies the operator to finish the work and log-off. The operator then must log-off or be cut off. In either case she has to log on again a few minutes later. (I have never had interruptions of this sort in my experience with OCLC. Not being a technically informed person, I wonder if the condition might not improve if the network had its own dedicated computer.)

d. Maintenance

The Zentec terminals have not required maintenance to date and, therefore, we cannot evaluate the maintenance service. But it may be worth noting from conversations we have had with BALLOTS, we believe our units are covered by a maintenance agreement, but we have not yet been billed, nor have we seen a maintenance contract.

III. Data Base

a. Admittedly the BALLOTS data base is only about one third the size of OCLC's. On the other hand, our experience shows that hit rates are improving, especially in foreign language materials. The UCD interlibrary loan staff reports that the hit rates for the last two attempts to search BALLOTS are exceptionally good: 50% and 92%. The rate will probably fluctuate widely from time to time, but we like to think this ILL experience is indicative of improving character of the data base. As a result of using BALLOTS, UCD-ILL is now borrowing books from libraries from which we never borrowed before.

There are, however, a number of deficiencies, some of which are specifically related to the character of UCD collecting interests. The major lacks from UCD's point of view are:

1. MARC serial data

2. NLM data, some of which are present in the MARC tapes but are not visible to users, and the Health Sciences Library catalogers are decidedly disadvantaged by their absence. According to the Health Sciences Library staff, the NLM data included in the MARC tapes are not the final, authoritative version, which CATLINE contains. Therefore it would facilitate medical libraries greatly if BALLOTS would subscribe to CATLINE ($1,000/yr.) and make the data available through the terminals.

3. The retrospective (prior to 5 February 1977) files in the following LC classes:

QM	Human anatomy
QP	Physiology
QR	Bacteriology
R	Medicine
SB	Plant culture
SF	Animal culture
SH	Fish culture & fisheries

b. The quality of contributed data to date has been on the whole quite good, and we hope that the quality will be sustained at the present level. (UCD accepts the records contributed by Stanford, except Meyer and some art and music cataloging, Berkeley and UCLA with the same level of confidence as we do MARC records.)

The UCD staff feels that from the standpoint of the quality of catalog data, there is a definite advantage in selecting BALLOTS over OCLC. The number of participants to date is still small and the contributed records are mostly of high quality. If UC and other users could organize early on to tackle the problem of

standards, it may be possible to maintain the quality at the current level. In this connection, we would like to advance a concept of permissible levels of cataloging. Not all library materials require or deserve full MARC cataloging. If less than full cataloging is to be accepted into the data base, these records should be identified in such a manner as to be easily recognized by the user. The concept needs further exploration and examination, but at present we think a possible approach to levels of cataloging may be through the number of required data elements for each level. This concept should not be confused with authority control.

IV. Data base searching, etc.

The flexible and multi-access mode of searching in BALLOTS is one of the most successful features of BALLOTS. BALLOTS search proved so efficient that the use of MCRS dropped drastically at UCD. The comparison of efficiency between the two search tools is remarkable. With MCRS the average number of titles searched is 45, and to these must be added the time to produce paper copy from the fiche. The average BALLOTS search is 90 items per hour for UCD, including the time to produce catalog copy.

As much as we like the BALLOTS search, we feel there are other access points, the addition of which would make searching in BALLOTS even more productive. Some examples are US government document numbers, ISBN, inclusion of subtitles in title word index, and volume numbers within series. For further information, see attached Search Statistics (Attachment 1).

V. Display Modes

UCD finds the display modes currently available to be satisfactory. Specifically we think the following features to be particularly helpful.

a. Mnemonic tags which are related to speech rather than the straight MARC tags which are numeric. Indicators and delimiters are same as those used in MARC.

b. Ability to examine one's own record instead of a data base record

c. Flexibility to access particular data or data elements is a much appreciated feature of the system. Particularly noteworthy are: ability to select to set the search in such a way as to see our own CD file first, MARC file second, etc.; ability to select short, long, full, or partial form; ability to select a bib screen to zero-in on the data element desired.

While not absolutely essential we think the following would improve the system and recommend them for consideration:

1. LC and NLM subject headings be identified on the screen. Currently LC and NLM headings are run on with no distinction between the two types.

2. Display of all holding libraries on one screen. Currently one must call for each holding library's record seriatim.

3. In addition, the locations should be specific. Currently, the UCD Main Library system is shown only as "J", forcing acquisitions and ILL searchers to call up the holding screen to fix on the actual location: The Main Library, Physical Sciences Library or Ag Econ Library.

VI. Editing

Copy catalogers find editing very easy; specifically they find error messages and suppression function useful. The user parsed call no. feature came in for a special praise. Further, we think identification of locally produced headings to be a superior feature and is potentially very important in a network situation for authority control.

The average speed of original input is 8 titles/hr., including the time for proof-reading. System-supplied ISBD punctuations will effectively aid the input operators and improve their productivity in original input. The user's manual is on the whole very helpful. We are appreciative of the BALLOTS staff's effort to improve the manual by inquiring the users' wishes and reactions. The handling of up-dates (replacement pages) has been satisfactory.

VII. Output Products

a. Variety of products offered

The lack of serial card service is a drawback. Although the monographic card formats are not entirely suitable for serials, UCD will shortly start experimenting with adapting the monographic formats for serials records

b. Archive tape

UCD has not yet availed itself of the service but the assumption is that it will be acceptable.

c. Catalog card service

As of this writing there are still three problems not yet resolved:

1. no cards for titles catalogued

2. cards missing from sets

3. systems inability to produce cards with long contents notes.

We expect the first two problems to be solved very shortly. I must admit that in my experience with 2 OCLC installations, I never experienced as many types of card problems nor problems persisting so long (over 4 months) as with UCD's experience with BALLOTS. Some of the major types of problems were:

1. no cards at all

2. partial sets

3. no destination

4. run-on call nos. or no call no.

5. can't get cards with long contents notes

6. printing problems: streaked, smeared or faint cards

Because we had a wide variety and significant number of card problems, untold number of staff time has gone into checking the card shipments, reporting on the problems, and reviewing the data base records to discover the causes of problems. Hopefully these activities will eventually disappear once we establish that the computer errors have been corrected and our errors in input have been reduced to a minimal level.

Card turnaround time has been excellent. UCD closes the weekly cataloging on Friday evening, and the cards for that week's production are delivered to the library on the following Tuesday.

d. Other services

UCD has used SSR service and decided that 30¢/mo./title was too expensive.

We suggest that printing of spine labels might be combined with the card service.

We see many uses for data captured in magnetic tape format, such as producing lists by form, call #, location, etc. However, production of software to manipulate the data may properly be a function of ULAP rather than that of the network utility. Currently UCD is examining the feasibility and cost effectiveness of using tapes to input new book data into the circulation data base.

Beyond the current expectations, UCD would like to see BALLOTS develop means of data transfer in addition to the tape format.

VIII. Human factors

a. All those who have searched the BALLOTS data base report that search is easy to learn, and it is fun. The search is at least twice as fast as it is with MCRS which, before the advent of BALLOTS, was the most efficient tool in terms of time and hit rate.

The Acquisitions supervisors feel that there has been a definite shift in the quality of personnel assigned for bibliographic

search. Whereas searching used to be primarily a clerical or student job, searching in BALLOTS requires LA I and LA II levels of personnel. Verbal skills are a basic requirement for successful search on the terminal.

b. All those who use the Zentec terminals claim that it is easy to learn to use. The eye strain is not as great as some other CRT devices, and it is definitely better than microform readers. However, a session longer than 2 hours is not advised.

BALLOTS mnemonic tags are easy to use. Error messages and prompts are very helpful.

c. UCD staff feels that the file security is adequate, and the method of identifying authorized personnel for the levels of tasks is well maintained.

d. At present an account is confined to use a particular function (inquiry, search, catalog or network), and it is not permitted to set any other function other than its own, not even to a lesser function in the hierarchy of the functions. For instance, when the Acquisitions staff searches on the CRT, the search must be conducted in catalog functions, for apparently the CRT accounts are contracted for cataloging only. Admittedly, search can be conducted just as well in catalog function as in search function, but a searcher doing violence to the records in the data base, accidentally and innocently, is a possibility, however remote it may be. Prohibition against a search account to set function catalog is obviously necessary, but the prohibition against a catalog account to set function search serves no purpose and may even be undesirable.

Computer connect hour charge is a factor which influences the ease of using the system to a considerable degree. Since BALLOTS is on the whole costlier than OCLC, and also because UCD has had to conduct its BALLOTS experiment out of its current far-from-luxurious operating budget, we have put some emphasis on the efficient use of the terminals.

We require some 40 to 50 hours of search per month via the typewriter terminal to produce an adequate number of catalog copies for the copycatalog staff, and in order to create the necessary amount of free search time, copy catalogers have always been under pressure to produce more than 12 titles per hour. (This peculiar situation is due to the method of charging used by BALLOTS: if less than 12 titles were cataloged per connect hour, the charges will be $1.00 per title plus $12 per connect hour; if more than 12 titles were cataloged per hour, the charge will be $2.00 per title only, subsuming the connect hour charge) According to the copycatalog staff, cataloguing 12 titles per hour is not at all difficult, and the current speed of 17 plus titles per hour requires efficiency but does not cause a great strain.

In the acquisitions search also the connect time charge creates a certain amount of pressure and forces the supervisors to use only those people who understand the search logic, and can think and interact with the computer responses appropriately and rapidly under pressure. As already mentioned, these circumstances make it necessary for us to up-grade our bib search staff; on the other hand, we think the BALLOTS search is efficient enough so that the up-grading of the search personnel has proven cost-effective.

IX. Needed requirements, etc.

a. Display mode

For use by the personnel in ILL, CD and Acquisitions we think the following features will be extremely useful:

1. specific locations of items

2. one screen to show all the holding libraries

3. holding libraries symbols to be arranged in some logical sequence, For example, all UC together, or all libraries in a cooperative or Northern region grouped together, etc. (The implication here is that selecting an appropriate partner for interlibrary loan can be a chore with OCLC, because some records have upwards of a hundred holding library symbols attached and they are listed in no logical sequence.)

b. Data base characteristics:

1. inclusion of NLM data which are currently lacking, including CATLINE

2. Health Sciences Library requests inclusion of NLM call nos. to be displayed in the long form

3. access by ISBN, US govt. document numbers

4. inclusion of subtitles as access points

5. inclusion of Marc serial data

c. Cataloging

1. automatic provision of ISBD symbols

2. authority control

3. conventions on the levels of cataloging and identification of levels on the screen

4. for additional suggestions, see E. Payne's memo

d. Serials

1. MARC tapes should be made available as soon as possible

2. serial card service should be given at least a middle priority

3. taking into account the CONSER Project, Network conventions on the serial holdings statement should be worked out.

e. Hardware

1. print attachment accommodation

f. Acquisitions

1. in-process file, order processing, receipt and claim

g. Management information

1. cataloging statistics (see attached memo from E. Payne) and

2. search statistics

h. Output

1. selective outputs in machine readable form, e.g. list by location or shelf list order, or serial data only, etc.

i. BALLOTS user organization and its sub-groups for the purposes of

1. consultation with BALLOTS Board on policy questions

2. setting priorities on desired features and future modules

3. establishing an authority control scheme

4. establishing cataloging standards and standards for levels of cataloging

5. facilitating user discussion and problem solving

X. Start Up

UCD was prepared to go on-line in December 1976, but through a series of scheduling problems we did not have our training until January 1977. Some unhappiness over this situation was communicated to BALLOTS Center.

Installation

During the period of installation we experienced some communication problems with BALLOTS Center. While some blame may be attached all

around, considering the fact that we were dealing with two giant bureaucracies (UC and the telephone company), we can say that the problems were minor. The BALLOTS personnel who came to install the system was exceedingly courteous and helpful in answering questions from our staff.

Training

The BALLOTS trainer was on the whole effective, but she might have used a little more structure in her approach. After some experience with BALLOTS by the user, her free form (sometimes casual) is probably the more efficient method, but for trainees with little or no experience a methodical course of instruction might prove better.

Other Aspects

We feel that BALLOTS business practice needs improvement. For instance, despite repeated requests, to date we have not been provided with information relating to the activities in the UCD's Mellon/Sloan grant account.

As referred to earlier, there are a few outstanding card problems requiring solution. It seemed to us early on that the BALLOTS personnel was not assiduous enough in following up the problems posed by us. (In saying this, we are fully cognizant of the fact that BALLOTS is still an evolving network, operating with a small group of keenly intelligent but relatively inexperienced staff. While we become annoyed with small problems from time to time, we are appreciative of their courtesy and efforts.)

The Manual is helpful for the experienced staff, but for novices, it is too detailed and difficult to comprehend. A handy guide for new trainees may make the initial introduction to the system somewhat easier. Up-dating of the Manual has been satisfactory.

The Newsletter is a good device to keep the users informed. We hope that BALLOTS Newsletter will not become a substitute vehicle for the Manual as the OCLC Newsletter has become. The OCLC Newsletter contains all procedural changes, new features, etc. and users must refer to it frequently, for there is no regularly up-dated manual. Although there are indices to the newsletter, it is not a convenient tool as a manual.

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June 8, 1977

TO: Jay Cunningham

FROM: Kazuko M. Dailey

RE: BALLOTS Evaluation Report - Supplement

ACQUISITIONS

At UCD an experiment to search in the BALLOTS data base was started in the Acquisitions Department in March 1976, using a DECwriter terminal with an acoustic coupler via the ATSS line. The objective of the project in March 1976 was simply to discover the extent of correlation between the UCD collection profile and the character of the BALLOTS data base. However, since the modest beginning a year ago (see attached report by D. Biblarz, dated 5-20-76), we have come to depend on BALLOTS to supply at least 2,000 LC and other catalog copies a month. Pre-cataloging search is now an established processing step. As indicated in the main report (see Cost of Obtaining Catalog Copy), this level of catalog copy production requires between 40 to 50 hours of connect time, and some 3500 to 4000 titles are searched in that amount of time. In the early days of the experiment, we thought that searching 45-65 titles per hour was satisfactory. Today, a year later, we know that an experienced searcher can handle 90 titles per hour, including the time required to print out the catalog data in the "long" format.

The Acquisitions' searchers have been using the CRT's about one hour a week to search "difficult" titles for which we expect a low hit rate. They are time consuming, for each title requires more than the average number of queries (1.3 per title), but because the CRT's are considerably faster than the typewriter terminal, we can search more items in any given unit of time. When hits occur, the searchers note the record ID, and the catalog data are captured later through the typewriter terminal.

CATALOGING

The on-line cataloging was initiated at UCD in January 1977 with 2 Zentec terminals in the Catalog Department. A dedicated TELPAK line connects the terminals directly with the BALLOTS computer. When funding for full on-line operation becomes available, we plan to add another terminal. At present the General Library's BALLOTS facilities are shared by the cataloging units of the Law Library and the Health Sciences Library.

The terminal usage for cataloging increased from 105.5 hours in January to 139.8 hours in April. During the same period, the number of titles cataloged increased from 1516 titles in January to 2617 titles in April, showing an encouraging sign of increased efficiency in the use of the terminals. The Health Sciences cataloging output ranged from 194 to 337 titles between March and May.

UNIVERSITY OF CALIFORNIA—(Letterhead for interdepartmental use) D3877 (2/76)

The overwhelming majority of the titles copycataloged are books from the current cataloging pool, while the original cataloging input (18 to 20%) for the most part represents materials from the backlogged collections. If funds are available for the next year, UCD plans to submit all Roman alphabet monographic catalog data, including transliterated cyrillic data, a total of 26,500 records, to the network data base. If modified monographic card formats can be adapted for serial cataloging, we may use BALLOTS for serial cataloging also. Serial cataloging will add another 5,000 to 6,000 titles.

Excluded from the on-line cataloging are Asian language material (1,000+) avant-garde collection (1,150) and theses (450). The latter two categories are excluded because they are not given standard cataloging.

The Health Sciences Library, on the other hand, plans to catalog almost all its monographs (4,000) through BALLOTS.

UCD does not plan shelflist conversion, at least for the near future, for two reasons: $2.00 per title is prohibitive, and we do not have the personnel resources to undertake such a mammoth project.

NATURE OF THE EXPERIMENT

As stated above, BALLOTS search in the Acquisitions Department was started simply as an experiment, but it became in a short time an integral part of the technical processing stream. On the other hand, the on-line cataloging was initiated with a conviction that the future of cataloging lies with the on-line procedures and a fair amount of confidence that once going to an automated system, we would not return to a manual system. Thus, when UCD adopted BALLOTS it was done with full consideration of the consequences of that decision. Whether the UC system would select BALLOTS or OCLC was not considered a crucial point, for we felt that a decision against BALLOTS, while it may cause a temporary discomfort, would not create a serious or long term dislocation in the Catalog Department.

INTERLIBRARY LOAN

Though a marginal experiment to date, ILL is assigned a total of one hour per week on the CRT to search BALLOTS. If the high rate of hits obtained in the recent weeks continues, the ILL will probably become a regular user of BALLOTS. (For further information, see the main report.)

COST DATA

UCD has not yet begun collecting data on the impact of BALLOTS on the staffing in the Catalog Department, though a list of cost items to be measured is currently being drawn up. Statistics on the direct costs of searching and cataloging will continue to be maintained in approximately the same manner as shown in the cost data included in the main report.

OTHER

Direct input from BALLOTS into the circulation data base and, eventually, interfacing of BALLOTS serial data with the UCD serial data base are capabilities desired for the future. In addition, we intend to experiment with printing of book purchase orders at the typewriter terminal. Admittedly a primitive method, we think as an interim procedure it can be adapted efficiently to print out some 50% of firm book orders placed, without acquiring additional equipment.

During 1977/78, we plan to purchase 2 terminals (1 unit currently on loan from BALLOTS until June 30 must be paid for and we plan to purchase another unit). Although the cost of the terminals is a small part of the expenditures required for BALLOTS operation, in view of the extremely tight budget situation, UCD will welcome any assistance from Systemwide.

Whether one calls it a need or desire, it would be extremely useful to have a broker who can access the OCLC and other data bases for its customers. Needless to say, expanded access to a large number of catalog records can be used for a variety of library activities, but access to OCLC in particular will ease some of the difficulties currently experienced by the Health Sciences Catalogers (see the main report).

I have personally had the experience of installing an OCLC system in Ohio at one of the charter member libraries of the OCLC in 1971. In 1974 at City College, CUNY, I installed the system as a member of the SUNY region. The two experiences are difficult to compare because variables are numerous and comparisons tend to be qualitative and subjective. The chief difference, as I recall, is that in the Ohio experience, the staff felt confident because all the information came directly from the horse's mouth, so to speak, and the staff at OCLC was assiduous in following up the training, questions and problems. (In those days there were only 50 participants!) The same level of confidence in the SUNY staff did not exist among the cataloging staff at City College library, and the communication between the library and SUNY was at times tenuous. I caution that these remarks be taken solely as my personal experience and not as a widespread view of the members of the SUNY region.

KMD/ia

cc: B. Kreissman
S. Baker
D. Anderson
E. Jestes
E. Payne
P. Piper
R. Stevenson
S. Salmon

Att.

WASHINGTON UNIVERSITY
July 1976

EVALUATION OF OCLC AT WASHINGTON UNIVERSITY LIBRARIES

A Report Submitted to Karen Luebbert
as part of the
HEGC-OCLC Project Final Report
to the State Librarian

Prepared by Judy Fox

July 6, 1976

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OCLC was first seriously considered as a possibility for Washington University Libraries in April, 1974 when 3 staff members traveled to Columbus, Athens and Dayton, Ohio to visit the offices of the Ohio College Library Center and to see OCLC in operation in 3 university libraries. To familarize staff with the system we showed videotapes produced by Kent State University explaining the OCLC system to the Technical Services staff before the MECC-OCLC project started. Several meetings were also held to plan OCLC procedures. Furthermore, our profile which outlined the exact specifications of our cataloging requirements was complete before the first meeting of the project coordinators.

We began keeping daily statistical worksheets in September, 1974 to try to measure the cost of searching and cataloging a book. It was hoped that we could obtain pre and post OCLC figures and make a comparison. However we had only 2 months of pre OCLC statistics so any comparison we might try to make would be weak, especially when you consider that we were also preparing for OCLC during these 2 months.

In October, 1974 the coordinators from each library were trained at the Washington University School of Medicine Library by the Project Director. Unfortunately this training was not as extensive as it should have been and each coordinator ended up teaching herself by trial and error. The techniques of using an OCLC terminal are quite simple but the introduction of the MARC system and OCLC cataloging policies require time to learn. Much time could have been saved and many mistakes avoided if our training had been better. Ideally we should have been trained by an OCLC staff member--it may have cost a bit more initially but it would have meant a savings of time, money and emotional strain in the long run.

We received our 2 terminals in November, 1974 and training of staff began immediately. Staff were trained in groups of about 8 in a series of 3-5 separate sessions. Then everyone was given time to practice by themselves. Individualized

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instruction would have been preferable to the group instruction but we had only a one week training period and then we were given authority to begin producing cards. At this point we had only 2 months to detect any problems in our profile and with a wait for cards of at least 1 week we felt that we needed to start cataloging books immediately to test our profile even though we weren't completely trained. We did selective searching and cataloging of books on the terminal in the latter part of November and all of December. Most of these books had exact Library of Congress cataloging for which we had to make only minor changes. Beginning in January, 1975 all post order searching and all cataloging (except serials cataloging) was accomplished through OCLC. We purchased a third terminal in March, 1975 when we were unable to complete our searching and cataloging functions with our original 2 terminals.

Organizationally several changes were made in the Catalog Department as a result of our OCLC participation. The Card Preparation and Catalog Maintenance Divisions were merged into one division and an OCLC Unit Coordinator was appointed to supervise all OCLC operations (See attached organization chart). A filing position vacated in July, 1974 and a typing position vacated in October, 1974 were never filled. A Junior Cataloger position vacated in May, 1975 has also not been filled. Almost everyone's duties changed as a result of our OCLC participation. In the Bibliographic Searching Department every one's duties were also modified but no major reorganization was necessary.

Our procedures and workflow in both the Bibliographic Searching and Catalog Departments have changed dramatically as could be expected. Books with CIP (Cataloging in Publication) are sent directly to the Catalog Department. The great majority of these books are in the OCLC data base when the cataloger first searches them to order cards. The number of books in this category is constantly increasing as CIP coverage expands. Before joining OCLC some of

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these books were backlogged until we received LC cards. All other books are then searched on the OCLC terminal. If Library of Congress cataloging copy is found the searcher copies down the main entry and call number on the order slip and the book is sent to the Catalog Department. Then the cataloger verifies the main entry, call number and series in our catalogs, compares the copy in OCLC to the book, makes any necessary modifications to the record and produces cards. We will soon be making more changes which will allow us to catalog more books at the time of the first search than we do at present. This should save us time and hence speed up the processing of books and increase production. At this time we do more preliminary checking of non-LC records in the data base than of LC records. These records do not always have an LC classification and subject headings and entries do not always correspond with LC practice.

Books for which no cataloging is found in OCLC are either backlogged or searched in the NUC catalogs depending on the currency of the book. The maximum period of time for which we will backlog a book is still to be determined. We originally planned to re-search books with no copy or only member input copy every 4 6 weeks but this is not always possible. If a book still has no copy after a period of time a searcher will look for cataloging copy in the NUC catalogs. If no copy is available they will try to find verification of main and added entries and any other helpful information. A cataloger will then catalog the book filling out a worksheet which will be input into the OCLC system by a card preparation assistant.

The impact of OCLC on Washington University Libraries has indeed been great. There are many advantages and disadvantages to the application of this system here although it is still too early to make evaluations in some areas. Certain areas of savings can be identified now however. First there is a savings of over 30 hours a month in the prefiling of cards before they can be filed in the catalogs. We receive our cards from OCLC in filing order so the step of

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are
prefiling has been virtually eliminated. We also saving close to 100 hours a month in the overtyping of subject headings and added entries, the revision of this overtyping and the preparation of the cards before they can be sent to the printer for reproduction.

Another area of savings is in our cost per card. Cards produced through OCLC cost 3.4 cents each (3.9 cents after July 1, 1976). Cards reproduced by our printer are 6 cents each although they were only 4.5 cents each through February, 1975. We produce an average of 13,000-14,000 cards a month so we should be saving more than $300 a month on card costs. We are also probably saving about 50 or more hours a month in the filing of LC cards in the depository file since we are now keeping only LC cards not included in the MARC system.

In the processing of books there has been a decrease in the time between the date a book is received and the date it is cataloged for books with CIP. Before we joined OCLC we backlogged books with CIP if we did not already have an LC card. Many books did not need to be backlogged because cards were already in the depository file but some books did need backlogging for a short period. Now none of these books are backlogged--they are sent directly to the Catalog Department after receipt. Pre order searching of book requests in OCLC also speeds up the total processing. If LC copy is found at the time of ordering, books go directly to the Catalog Department upon receipt. Also pre order searching in OCLC gives us more information than is often available on the request slip.

The Interlibrary Loan Division has also found OCLC useful for gaining additional information or correcting inaccurate information on requests. They can also verify current books more easily and they occasionally verify books in OCLC which they can't verify elsewhere. For older works they can find other libraries which own the books but never books are not borrowed according to the national interlibrary loan code.

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OCLC has not produced any significant improvements in some areas. For instance the period of time between the date when a book is cataloged and the date cards are filed in the public catalog is about the same or possibly a little faster under OCLC. Another area of little or no change is in the amount of non-LC cataloging which we do. This has remained at about 18-20 percent of our total cataloging. However, of this amount, 80 percent used to be completely originaly cataloging and the rest had cooperating library cataloging in the National Union Catalog. Now the total for which we can find no other cataloging is closer to 55 percent and the other 45 percent have been cataloged by other libraries in OCLC. The figure for completely original cataloging is continuing to drop.

Along with the benefits we have obtained from OCLC we have also acquired some problems. Original cataloging takes longer with OCLC than with our previous system. This is because there are more things which a cataloger must do. The cataloger types up a worksheet and assigns MARC tags and then a card preparation assistant must input it. It also takes the cataloger slightly longer to catalog a book with LC copy than under our old system. We are also still inputting a lot of foreign language LC cards and it takes considerably longer to input this information and produce cards than under the pre OCLC system. The MARC program is being expanded to include more foreign languages so this problem should eventually decrease. Also LC cataloging is still not always replacing cataloging by other libraries and we must do more checking of this non-LC cataloging.

Another important consideration in evaluating OCLC is the need for more supervision. During the training period the supervision is naturally a very extensive task but even after the initial training is completed questions continue to arise. Also OCLC is a constantly changing system and often changes must be implemented without a great deal of advance warning or preparation.

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Staff reaction to OCLC has varied greatly. No one in the Bibliographic Searching and Catalog Departments has been unaffected by OCLC. Many people were hesitant or afraid of OCLC before we started using the system. This was to be expected because the pre OCLC procedures which had been in effect were working well with few problems. To give this up for a new unknown system caused some concern. However there were also many people eagerly looking forward to the new system. Once we received the terminals and people were trained in the new system most of the fear disappeared. Now the biggest problem is frustration. When responses are slow everyone gets very frustrated because they cannot accomplish as much as they would like. This leads to an overall negative attitude towards OCLC at times.

By far the biggest problem with OCLC is the periods of slow response time and excessive down time. When we joined OCLC in November, 1974 the response time and down time were both very bad and they didn't improve until the end of February 1975. The same thing occurred in November and December of 1975. When other OCLC subsystems become operational response time may be even more adversely affected. If this trend continues it will be very difficult to make OCLC cost effective at Washington University Libraries. Much time is now wasted waiting for responses and trying to determine whether the problem is just slow response time or computer down time.

Our inability to use the OCLC system for all our cataloging also hurts the overall usefulness of the system. We still need to maintain a manual operation for cataloging serials and music scores and records. This dual operation is not efficient and the low volume of cards we have manually reproduced causes a delay in the printing and hence a delay in getting the cards into the catalogs.

It is still too early to determine if OCLC can be cost justified at Washington University Libraries. We must pay the first time use charge for at least 85 percent of our cataloging. The cost and maintenance of this equipment

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must also be recovered. We must also consider OCLC in light of its future developments in serials, interlibrary loan, subject searching and other areas. We have been using the OCLC system for one and one-half years but it is still too early to make a final evaluation and considering the constantly changing nature of the OCLC system a final evaluation will probably never be possible or even desirable.

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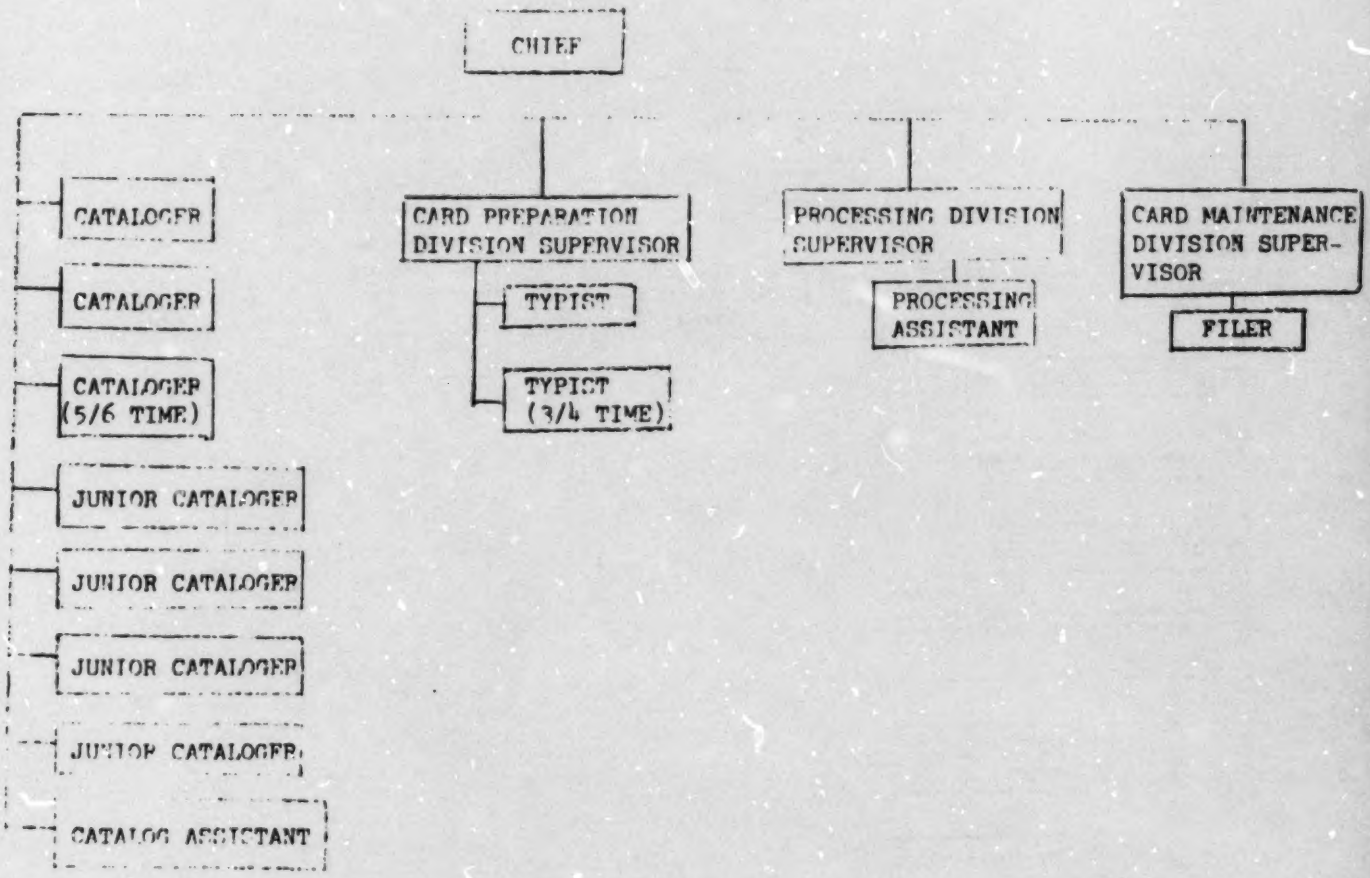
WASHINGTON UNIVERSITY LIBRARIES

[illegible] DEPARTMENT ORGANIZATIONAL CHART
BEFORE OCLC



Prior to July 1974 the catalogers, junior catalogers, and catalog assistant were responsible to the Head of the Catalog Division. This position no longer exists but there were only 2 catalogers when there was a Head of the Catalog Division.

There was 1 additional typist through September 1974 and 1 additional filer through June 1974.

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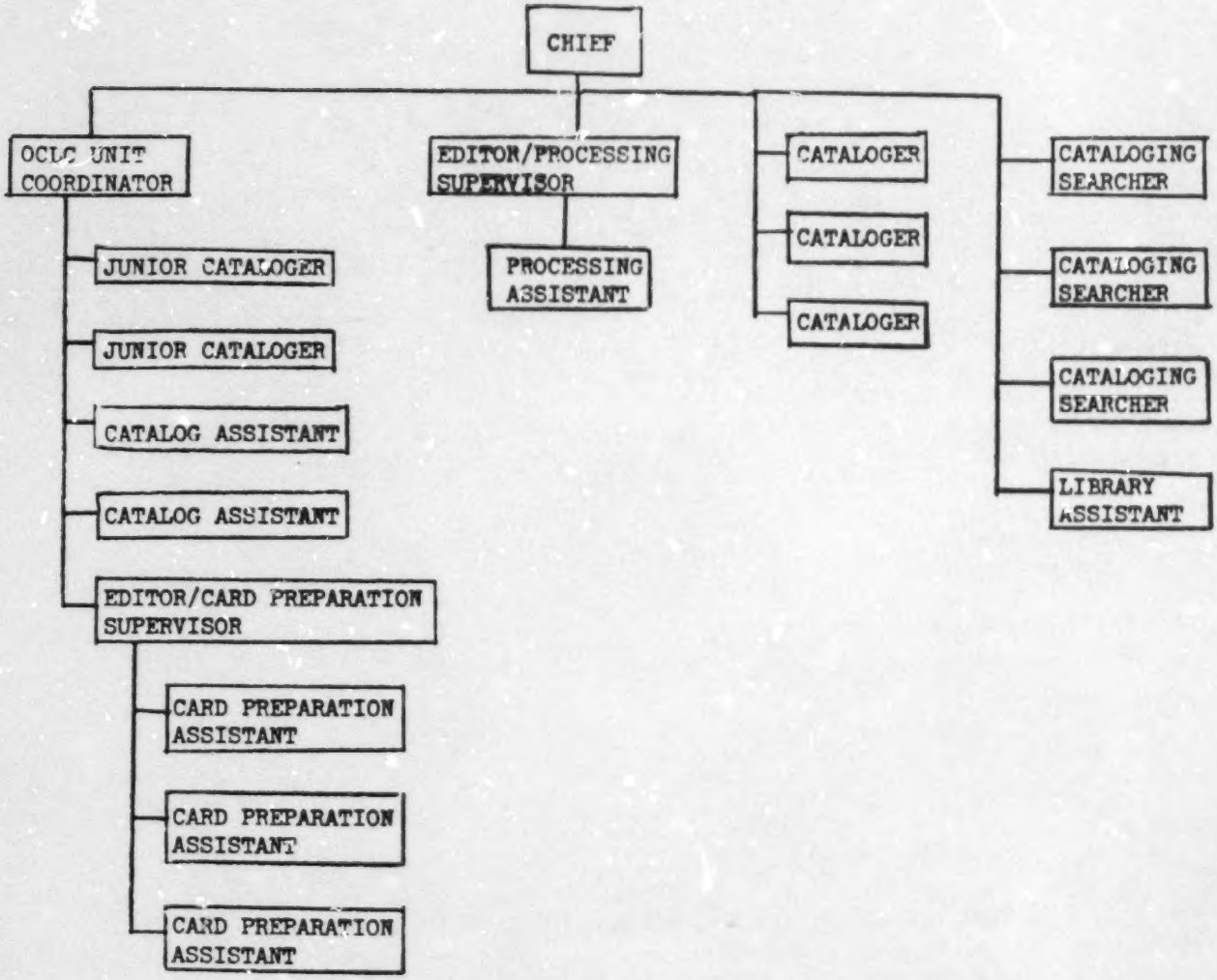
WASHINGTON UNIVERSITY LIBRARIES

CATALOG DEPARTMENT ORGANIZATION CHART

WITH OCLC



This chart reflects the Catalog Department structure as of January, 1977. The Cataloging Searchers and Library Assistant were previously members of the Bibliographic Searching Department which was dissolved as of December 31, 1976.

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4 LDMS OPERATIONAL CHARACTERISTICS AND BENEFITS

The purpose of this section is to describe the current operational capabilities and benefits of the University of Chicago Library Data Management System.

The goal of LDMS is to provide automated data processing support for as many as possible of the labor-intensive functions required to operate a library. The central data base provides access to the most current and complete bibliographic and processing data. Many terminals throughout the University of Chicago Library provide access to the system from the locations where processing activity is taking place. The system now supports a wide range of library operations and data processing functions, and the end goal of development is to support all of them.

The following discussions of LDMS operations and benefits consider only the bibliographic and technical processing functions; the circulation system is not included.

4.1 Computer Systems Support of Bibliographic and Technical Processing Operations at the University of Chicago

The Library Data Management System supports library operations at the University of Chicago by providing:

- Centralized maintenance of LC/MARC and local bibliographic and processing records;
  - Supports Books, Serials, Music formats for records -- other formats can be added as needed;
  - Supports full LC/MARC Character Set -- character set capability is easily expanded.
- Decentralized, work-station access to all data base records through online terminals.

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- Data base searching capabilities for both bibliographic and processing operations;
  - Multiple access keys can be used singly and in combination -- ISBN, ISSN, LC Card No., Author-Title Search Code, Title Search Code, Status (for local records), and MARC tape data and local selector code (for MARC records). See also Authority System below for name and subject access.
- CRT screen formats tailored for specific operational use of data.
- Online data processing, data display, and data transmission programs designed for efficient operation.
- Keyboard input, update of local records;
  - Ability to use the terminal off-line for proofing and error correcting prior to transmitting for original input or for record update;
  - Automatic system checks and editing and online system diagnostic messages.
- Analysis of each new LC/MARC record by LC Classification, LC Card No. (PL 480 ranges) and ISBN (publisher portion) for automatic notification for items within the area of each selector's area of responsibility.
- Automatic search of incoming new LC/MARC records to find wanted records and report availability.
- Analysis of LC/MARC update records to determine the nature of changes.
- On-demand MARC Move/Merge capabilities -- to create or update local records with LC/MARC data.
- Centralized control over the status of bibliographic records and associated library materials.
- Ability during an online terminal session to specify subsequent printing of batch output naming ALA print train or special forms.
- Ability to obtain on-demand hardcopy printout of formatted records on terminal printers.

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- Creation and maintenance through the Authority system of Name and Subject Heading files and provision of online name and subject access using full or truncated form of heading;
  - System provides access to bibliographic records through headings;
  - System provides access to authority records;
  - System provides access to name and subject headings through bibliographic records.
- Automatic update of Authority file resulting from input, update, or deletion of bibliographic records.
- Name and subject headings entered on the Authority file only once; thereafter, any already existing heading may be used in the creation of a new bibliographic record requiring that particular heading.
- Order stage processing and printed products -- purchase orders in batch runs on demand.
- Automatic claiming cycles -- printed claim notices.
- Receipt and accessioning processing and products.
- Cataloging record final proof online in card format.
- Catalog card sets automatically determined.
- Catalog cards printed in filing order.
- System handles transliterated records and special format records for processing purposes.
- Binding and labeling processing and printed products, cards and labels.

Advantages of using the LDMS accrue to several specific areas of library operation such as reference, bibliographic searching, and technical services.

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REFERENCE

Through the LDMS, reference librarians at terminals at several locations throughout the library have access to all online bibliographic and authority files. This access allows them to answer questions about library materials as soon as an item is selected and ordered. If the item has arrived in the library, but has not appeared on the shelves, the system allows the reference librarian to determine where the item is in the technical processing operation and to arrange for the requester to obtain the book without waiting for cataloging.

For materials cataloged and assigned to permanent shelving locations, the reference librarian can use the system to identify the requested item and to ascertain its shelving location. Such access previously required the reference librarian to consult a number of separate, often distant files, including the card catalog, and several technical service files. Access to such paper technical processing files was usually limited to a single access point such as title.

In addition to information about library materials, access to LC/MARC records provides answers to questions regarding recent published items of interest.

In summary, the LDMS provides rapid decentralized access to a number of online files which have never before been available for routine use. Expanded services and faster services have resulted.

BIBLIOGRAPHIC SEARCHING

This activity is common to a number of traditional library operations such as reference, collection development, ordering, and cataloging. The LDMS supports these operations through a combination of routinely scheduled and operator-initiated search capabilities. Reference uses of searching have been previously examined. The LDMS supports collection development activity in several ways. The system analyzes incoming LC/MARC records according to the subject and area studies interests of selectors. This automatic searching service provides routine notification to selectors of items in their area of responsibility. In addition, selectors can initiate online searches based on current printed bibliographic tools to monitor the strength of collections in various areas.

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When selection and ordering result from the routine analysis of incoming LC/MARC, the LDMS benefits both the ordering and the cataloging activities by permitting the use of the already identified LC/MARC record as the basis of the order. This eliminates the need for any searching to verify the source of the bibliographic data for the order and secures LC cataloging copy for subsequent use in the processing of the item after its arrival, thus eliminating the need for additional searching at that time.

For orders entered in the system but not based on LC/MARC records, the LDMS automatically searches subsequent incoming LC/MARC tapes for potential matching records. The set of matching LC/MARC records are then reviewed by library staff and any genuine matching records are merged with the corresponding local bibliographic records, thus eliminating the need for subsequent searching for cataloging copy.

TECHNICAL SERVICES

Within technical services, where cost has been a large, if not the major area of concern, the LDMS offers significant assistance. Work simplification, the reduction of redundant and repetitive effort, and organizational flexibility are among the advantages to be derived. A person can, in one sitting at a terminal, perform all the functions required to receive a book, create and authenticate its bibliographic record, and request the required printed products. Printed products such as orders, claims, cancellations, and catalog cards are printed overnight and are available in the library the next day. This eliminates numerous steps which are necessary in traditional technical processing operations. Holding materials in batches is no longer necessary, and savings result from the elimination of the physical movement of staff from file to file. In acquisitions, cataloging data captured as part of ordering a title become the basis for the cataloging record rather than being lost or ignored as is the case in many manual or uncoordinated systems. Automatic MARC processing, a basic feature of the LDMS, eliminates both repetitive searching and the maintenance of complex manual file matching systems. And finally, the online shared bibliographic file available throughout the division breaks down traditional departmental lines, allowing processing to be viewed functionally, with operations performed in a manner that will minimize time and effort.

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To understand the possibilities for saving, one must consider the functions of technical processing in relation to the LDMS. Four functions of particular interest are the search-order, receipt, cataloging and catalog maintenance functions. The search-order function relies on the LDMS both in terms of reliable protection against duplication and automatic LC/MARC searching. For current imprint materials, the search-order process is a single operation where one searches the data base, and assuming a negative response, creates an order record immediately. This eliminates duplicate effort as well as reduces the possibility of unintentional duplication. The continual comparison of LC/MARC data against the data base reduces searching requirements to a fraction of that required in manual systems and allows the local data base to remain consistent with the LC/MARC data base at a minimal cost. The claim feature, another part of the search-order function, represents either significant cost savings or the return of a service which has been discontinued or performed extremely irregularly.

The receipt function using the LDMS becomes a key spot in the technical processing operation. In addition to the traditional check-in functions, access to complete bibliographic data online allows many cataloging decisions to be made more readily and accurately than before. It is possible that certain types of materials like added copies, added volumes, and routine new titles with LC copy can be processed entirely as part of the receipt function going directly from there to the stacks.

In cataloging, the functional approach to processing and the use of LC/MARC data results in many traditional cataloging functions being performed prior to the arrival of the material in cataloging. The cataloging function then becomes upgrading order records to full cataloging status, verifying headings that have not already been checked and requesting printed products. In many cases where LC copy is available, the operation is performed by an operator at a terminal in one sitting.

Catalog maintenance, a function that is often overlooked, is made significantly easier as a result of the LDMS. A struggle exists in most cataloging departments to assign sufficient time from production to engage in necessary catalog maintenance. The LDMS with the bibliographic records and the authority file online makes what has been a most tedious, expensive operation economically feasible.

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4.2 LDMS Benefits at Chicago

The purpose of this section is to consider the benefits that have been realized by the University of Chicago Library as a result of using the Library Data Management System. An assessment of overall cost savings is difficult, since a number of considerations have influenced the statistical picture of recent years, including rapid increases in levels of book purchases and staffing, followed by rapid decreases in levels of books purchased and staffing, a move to a new building (1970), various experiences with automation, advent of IC/MARC data, and changes in organization and personnel. The accompanying graphs illustrate some of the problems of interpretation.

In Figure 4-1, Monograph Production, and Figure 4-2, Staff Hours Worked, the data for the period 1963-1970 represent a period of increasingly high expenditures for library materials and on library staff to process these materials. Initial parts of the current Library Data Management System were implemented in 1973-1974, coincident with rapid drops in both monograph production and staffing.

Further development of LDMS and associated organizational changes to optimize the use of LDMS have continued to date. Because of these changes during the years, a stable period to serve as a bench mark is hard to find. The most reliable nearly-eqivalent comparisons can be made between the total staff hours and production levels of 1962/63 and those of 1977/78. Figure 4-3, Units to Hours Ratios, makes this comparison and shows that productivity rates with LDMS are 36% and 45% higher in Acquisitions and Cataloging than in the comparable earlier period (clerical staff only). Not all of this change can be attributed to automation, but it is clearly the largest single positive factor.

Using today's rates for clerical wages and benefits, calculations show that it would cost approximately $200,000 more for staff to carry out current work with pre-automation methods and procedures. Even more, that figure would inflate along with inflation of wage rates, whereas computer costs continue to decline.

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A further encouraging note is that as new features are added and operations become better organized, efficiencies continue to improve. Monthly production statistics for 1977-78 show steady increases to levels substantially above the averages for last year, and with no increases in staffing. Cataloging staff has for the first time in years been able to make inroads into the cataloging arrearages, making a reduction of more than 10,000 volumes this year.

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Figure 4-1

MONOGRAPH PRODUCTION

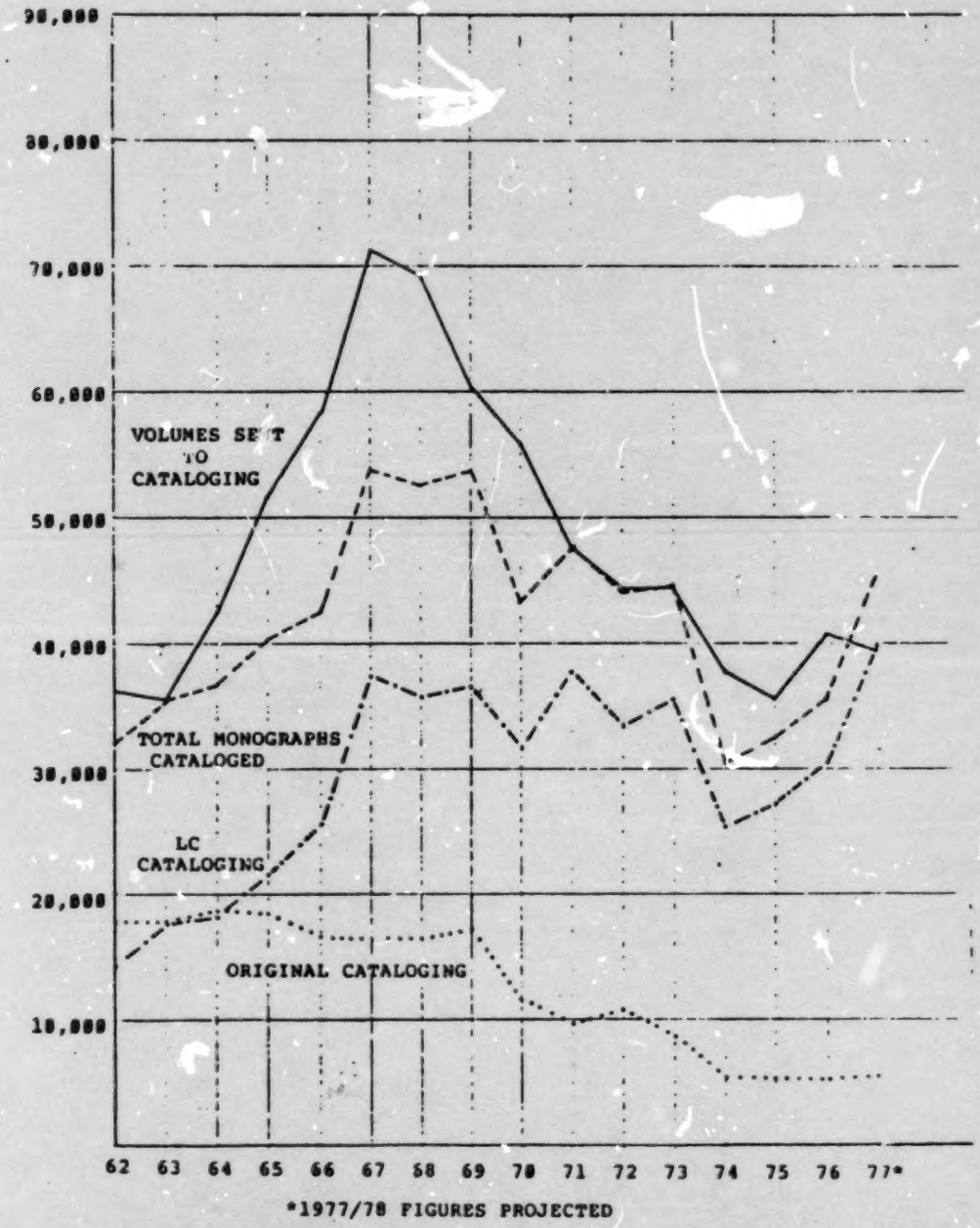

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Figure 4-2

STAFF HOURS WORKED

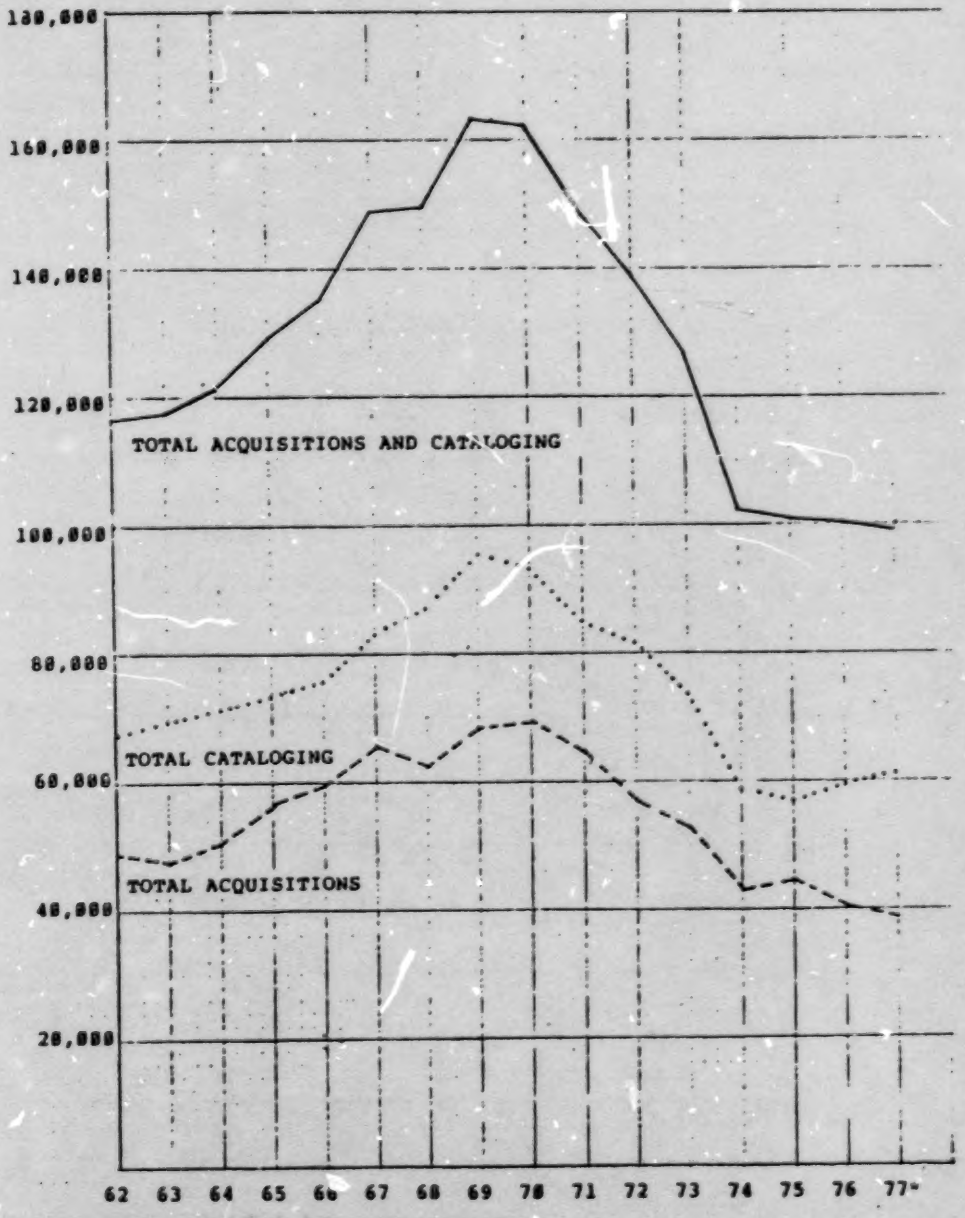

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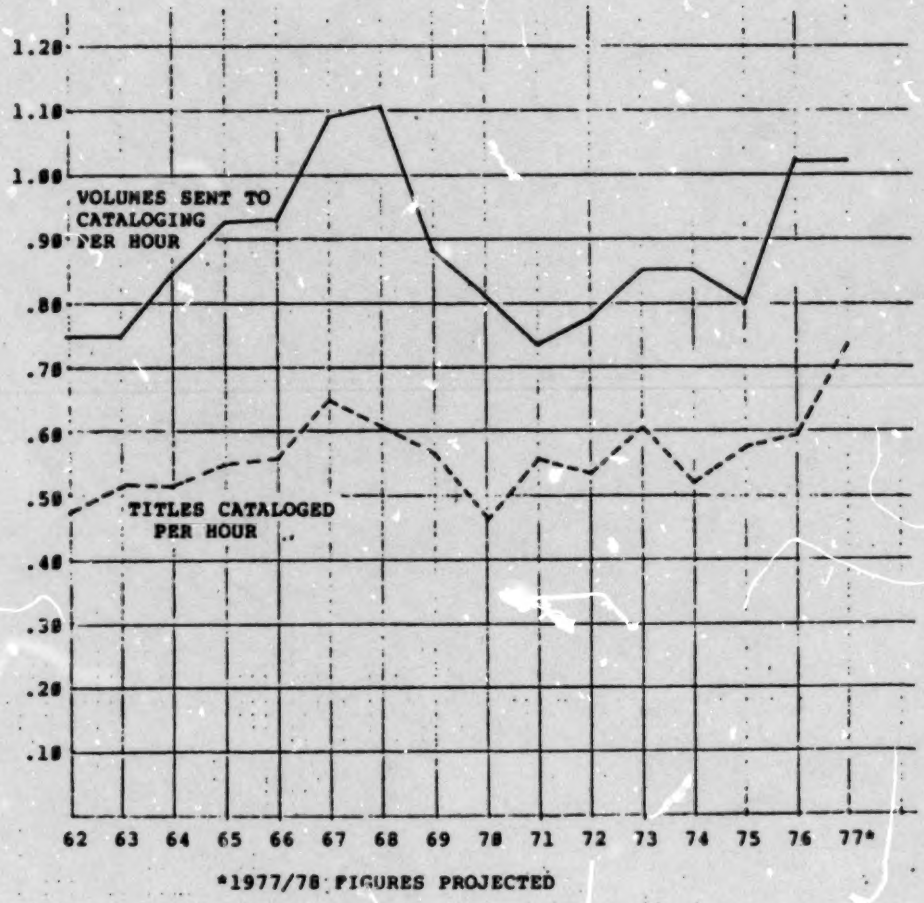
Figure 4-3

UNITS TO HOURS RATIOS



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